1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

N71 MLB - PVT OK2FAB

LAST_MODIFICATION=Tue Jul 21 11:39:02 2015

TABLE

SCH 051-1902
BRD 820-5507
MCO 056-01060

BOM 639-00263 (BETTER,DB30)
BOM 639-00265 (ULTRA,DB30)
BOM 639-00266 (SUPREME,DB30)
BOM 639-01056 (BETTER,B30)
BOM 639-01057 (ULTRA,B30)
BOM 639-01058 (SUPREME,B30)
BOM 639-01098 (BETTER,DB30C)
BOM 639-01100 (ULTRA,DB30C)
BOM 639-01099 (SUPREME,DB30C)
BOM 939-01627 (BETTER,DARWIN)

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DRAWING TITLE: SCHEM,SINGLE,BRD,N71

Apple Inc.

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REVISION: A.0.0

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SCHEMATIC & PCB BOM CALLOUTS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-1902	1	SCH,SINGLE_BRD,N71	SCH	CRITICAL	?
820-5507	1	PCBF,SINGLE_BRD,N71	PCB	CRITICAL	?
825-6838	1	EEEE CODE FOR 639-00263	EEEE_G2KM	CRITICAL	EEEE_16G_DB30
825-6838	1	EEEE CODE FOR 639-00265	EEEE_G2KN	CRITICAL	EEEE_64G_DB30
825-6838	1	EEEE CODE FOR 639-00266	EEEE_G2KL	CRITICAL	EEEE_128G_DB30
825-6838	1	EEEE CODE FOR 639-01056	EEEE_GKF9	CRITICAL	EEEE_16G_B30
825-6838	1	EEEE CODE FOR 639-01057	EEEE_GKFC	CRITICAL	EEEE_64G_B30
825-6838	1	EEEE CODE FOR 639-01058	EEEE_GKF8	CRITICAL	EEEE_128G_B30
825-6838	1	EEEE CODE FOR 639-01098	EEEE_GLHL	CRITICAL	EEEE_16G_DB30C
825-6838	1	EEEE CODE FOR 639-01100	EEEE_GLHR	CRITICAL	EEEE_64G_DB30C
825-6838	1	EEEE CODE FOR 639-01099	EEEE_GLHM	CRITICAL	EEEE_128G_DB30C
825-6838	1	EEEE CODE FOR 939-01627	EEEE_GR09	CRITICAL	EEEE_16G_DARWIN

S3E NAND BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S00039	1	NAND,1YNM,16GX8,S3E,64G,T,SLGA70	U1500	CRITICAL	NAND_16G
335S00075	1	NAND,1YNM,64GX8,S3E,MLB,64G,H,SLGA70	U1500	CRITICAL	NAND_64G
335S00079	1	NAND,1YNM,128GX8,S3E,TLC,128G,H,SLGA70	U1500	CRITICAL	NAND_128G

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S00074	335S00039	NAND_16G	U1500	HYNIX 16G SLGA70 C DIE
335S00078	335S00075	NAND_64G	U1500	HYNIX 64G SLGA70
335S00064	335S00075	NAND_64G	U1500	SANDISK 64G SLGA70 1Z
335S00065	335S00079	NAND_128G	U1500	SANDISK 128G SLGA70

CARBON/ACCEL BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
338S1163	1	IC,ACCEL,3-AXIS,DIG,BMA282,LGA14	U3030	NOSTUFF
117S0202	1	RES,MF,20 OHM,5%,1/32W,01005	R3030	NOSTUFF
117S0202	1	RES,MF,20 OHM,5%,1/32W,01005	R3031	NOSTUFF
117S0202	1	RES,MF,20 OHM,5%,1/32W,01005	R3032	NOSTUFF
138S0831	1	CAP,CER,X5R,2.2UF,20%,6.3V,0201	C3031	NOSTUFF
132S0316	1	CAP,CER,X5R,0.1UF,20%,6.3V,01005	C3032	NOSTUFF
338S00017	1	IC,PMU,MPU-6700-12,LGA16	U3010	INVENSENSE_CARBON
338S1163	1	IC,ACCEL,3-AXIS,DIG,BMA282,LGA14	U3030	INVENSENSE_CARBON
117S0202	1	RES,MF,20 OHM,5%,1/32W,01005	R3030	INVENSENSE_CARBON
117S0202	1	RES,MF,20 OHM,5%,1/32W,01005	R3031	INVENSENSE_CARBON
117S0202	1	RES,MF,20 OHM,5%,1/32W,01005	R3032	INVENSENSE_CARBON
138S0831	1	CAP,CER,X5R,2.2UF,20%,6.3V,0201	C3031	INVENSENSE_CARBON
132S0316	1	CAP,CER,X5R,0.1UF,20%,6.3V,01005	C3032	INVENSENSE_CARBON
338S00087	1	IC,CARBON 1.1,MPU-6800-00,LGA16	U3010	INVENSENSE_STANDALONE_CARBON

ALTERNATE BOM OPTIONS

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:	
138S00032	138S0831	ALTERNATE	C0610	TY,2.2UF,0201	NOT ALL REFERENCE DESIGNATORS LISTED. USED ~116 TIMES IN DESIGN.
138S00049	138S0831	ALTERNATE	C0610	KYOCERA,2.2UF,0201	USED ~116 TIMES IN DESIGN.
155S0660	155S0513	ALTERNATE	FL3100	MURATA,FERR,22-OHM	USED ~7 TIMES IN DESIGN.
138S00005	138S00003	ALTERNATE	C2000	TY,15UF,0402	USED ~63 TIMES IN DESIGN.
138S00048	138S00003	ALTERNATE	C2000	KYOCERA,15UF,0402	USED ~63 TIMES IN DESIGN.
138S0702	138S0657	ALTERNATE	C2111	MURATA,4.3UF,0610	USED ~3 TIMES IN DESIGN.
118S0764	118S0717	ALTERNATE	R2250	PANASONIC,3.92K-OHM,0201	
138S00006	138S0835	ALTERNATE	C1106	TY,4.3UF,0402	USED ~19 TIMES IN DESIGN.
152S2052	152S1929	ALTERNATE	L2060	CYNTEC,1UH,1608	
155S0773	155S0453	ALTERNATE	FL3110	TY,FERR,120-OHM,01005	USED ~61 TIMES IN DESIGN.
377S0168	377S0140	ALTERNATE	DZ3150	TDK,VARISTOR,6.8V,100PF,01005	USED ~9 TIMES IN DESIGN.
155S00067	155S0581	ALTERNATE	FL4200	TDK,FERR,240-OHM,0201	USED ~8 TIMES IN DESIGN.
155S00012	155S00009	ALTERNATE	L3100	MURATA,CHOKE,65-OHM,0605	USED ~11 TIMES IN DESIGN.
138S0706	138S0739	ALTERNATE	C3302_RF	MURATA,CAP,CER,10V,20%,10V,658,0201	USED ~17 TIMES IN DESIGN.
138S0945	138S0739	ALTERNATE	C3302_RF	KYOCERA,CAP,CER,10V,20%,10V,X5R,0201	USED ~17 TIMES IN DESIGN.
155S00095	155S00068	ALTERNATE	FL1280	FEBB BD,100 OHM,20%,100MA,2 OHM,01005	
138S0648	138S0652	ALTERNATE	C3650	TY,4.7UF,0402	USED ~12 TIMES IN DESIGN.
132S0400	132S0436	ALTERNATE	C1280	CAP,CER,X5R,0.22UF,20%,6.3v,01005	USED ~2 TIMES IN DESIGN.
155S0960	155S0941	ALTERNATE	FL3151	FEBB BD,70 OHM,25%,300MA,0.4 OCR,01005	USED ~9 TIMES IN DESIGN.
138S00024	138S0986	ALTERNATE	C1107	CAP,CER,3-TERM,7.5UF,20%,4V,0402	USED ~7 TIMES IN DESIGN.
335S00066	335S0946	ALTERNATE	U0900	IC,EEPROM,16KX8,1.8V,I2C,WLCSP4	
155S0653	155S0511	ALTERNATE	FL4600	FEBB BD,55 OHM,25%,750MA,0.090CR,0201	USED ~4 TIMES IN DESIGN.

POWER INDUCTOR ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S00120	152S00077	ALTERNATE	L2070	TAIYO 2016 1.0UH 0.65MM
152S00118	152S00075	ALTERNATE	L3700	TAIYO 2016 1.2UH

ACTIVE DIODE ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
376S00106	376S00047	ALTERNATE	Q2300	DIODES INC. ACT DIODE

SHIELD PART NUMBERS

REFERENCE DESIGNATOR(S)	BOM OPTION	PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
		806-02895	1	SHIELD,EMI,UPPER FRONT,WTOP,N71	SH0500	COMMON
		806-04588	1	SHIELD,EMI,LOWER FRONT,CLOSED,NOMU,N71	SH0501	COMMON
		806-03994	1	SHIELD,EMI,SA,OPEN,N71	SH0502	COMMON
		806-02897	1	SHIELD,EMI,UPPER BACK,WTOP,N71	SH0503	COMMON
		806-02898	1	SHIELD,EMI,LOWER BACK,WTOP,N71	SH0504	COMMON

SOC/PMU SUB BOMS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
685-00069	1	SUBBOM,SINGLE,BRD,MAUI,N71	SUBBOM_SOC	COMMON
338S00120	1	IC,PMU,ANTIOCA,AG,D2255A1,OTP-AL,WLCSP380	U2000	MAUI
118S0631	1	RES,MF,100 OHM,1%,1/32W,01005	R0730	MAUI
131S0307	1	CAP,CER,NP0/C0G,100PF,5%,16V,01005	C0730	MAUI
339S00112	1	PROD FUSED, H DRAM	U0600	MAUI
117S0161	1	RES,MF,0 OHM,1/32W,01005	R0651	MAUI

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
338S00122	1	IC,PMU,ANTIOCA,D2255A1,OTP-ZL,WLCSP380	U2000	MALTA
118S00009	1	RES,MF,3.01KOHM,1%,1/32W,01005	R0730	MALTA
131S0307	1	CAP,CER,NP0/C0G,100PF,5%,16V,01005	C0730	NOSTUFF
339S00124	1	M DEV FUSED, M DRAM	U0600	MALTA
118S00025	1	RES,MF,330 OHM,1%,1/32W,01005	R0651	MALTA

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
685-00070	685-00069	ALTERNATE	SUBBOM_SOC	SUBBOM,SINGLE,BRD,MALTA,N71

SOC ALTERNATES

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
339S00113	339S00112	MAUI	U0600	PROD FUSED, M DRAM
339S00114	339S00112	MAUI	U0600	PROD FUSED, S DRAM
339S00125	339S00124	MALTA	U0600	M PROD FUSED, H DRAM, ATK
339S00126	339S00124	MALTA	U0600	M PROD FUSED, S DRAM, ATK
339S00127	339S00124	MALTA	U0600	M PROD FUSED, H DRAM, SCK
339S00128	339S00124	MALTA	U0600	M PROD FUSED, H DRAM, SCK
339S00129	339S00124	MALTA	U0600	M PROD FUSED, S DRAM, SCK

INDUCTOR SUB BOMS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
685-00081	1	SUBBOM,SINGLE,BRD,CYNTEC,N71	SUBBOM_IND	COMMON
152S00074	6	IND,PWR,SHLD,1.0UH,3.6A,0.060 OHM,2016	L2000,L2002,L2010,L2020,L2030	CYNTEC
152S00074	5	IND,PWR,SHLD,1.0UH,3.6A,0.060 OHM,2016	L2040,L2050,L2300,L3300,L4021	CYNTEC
152S00081	6	IND,PWR,SHLD,0.47UH,3.8A,0.048 OHM,2012	L2001,L2003,L2011,L2013,L2021,L2041	CYNTEC

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S00117	6	IND,PWR,SHLD,1.0UH,3.6A,0.060 OHM,2016	L2000,L2002,L2010,L2020,L2030	TAIYO
152S00117	5	IND,PWR,SHLD,1.0UH,3.6A,0.060 OHM,2016	L2040,L2050,L2300,L3300,L4021	TAIYO
152S00121	6	IND,PWR,SHLD,0.47UH,3.8A,0.048 OHM,2012	L2001,L2003,L2011,L2013,L2021,L2041	TAIYO

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
685-00080	685-00081	ALTERNATE	SUBBOM_IND	SUBBOM,SINGLE,BRD,TAIYO,N71

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TESTPOINTS

POWER

TP00 — POWER GROUND
VOLTAGE=0V
TP-P6
ROOM=TEST

31 30 PP5V0 USB — TP01 — VBUS
TP-P6
ROOM=TEST

18 17 PP_BATT_VCC — TP02 — VBATT
TP-P6
ROOM=TEST

TP03
TP-P6
ROOM=TEST

TP05
TP-P55
ROOM=TEST

RESET

33 16 9 5 PMU_TO_SYSTEM_COLD_RESET_L — TP06 — SOC & BB RESET
TP-P55
ROOM=TEST

DFU

33 8 FORCE_DFU — TP07
TP-P55
ROOM=TEST

FORCE DFU PROCEDURE:
1. FROM OFF MODE SHORT TP07 TO PP07
2. PLUG IN E75 CABLE TO FORCE DFU

PP07
P4MM-NSM
2M
21 20 17 14 13 12 9 8 7 6 3 2 PP1V8
33 29
ROOM=TEST

PP08
P4MM-NSM
2M
33 7 DFU_STATUS
ROOM=TEST

E75

31 30 TRISTAR_DP1_CONN_P — TP08
TP-P55
ROOM=TEST

31 30 TRISTAR_DP1_CONN_N — TP09   TRISTAR USB
TP-P55
ROOM=TEST

31 30 TRISTAR_DP2_CONN_P — TP10
TP-P55
ROOM=TEST

31 30 TRISTAR_DP2_CONN_N — TP11   TRISTAR DEBUG UART
TP-P55
ROOM=TEST

31 30 PP_TRISTAR_ACC1 — TP12
TP-P55
ROOM=TEST   TRISTAR ACCESSORY ID
                                         ACCESSORY POWER
31 30 PP_TRISTAR_ACC2 — TP13
TP-P55
ROOM=TEST

TP14
TP-P55
ROOM=TEST

31 30 TRISTAR_CON_DETECT_L — TP15
TP-P55
ROOM=TEST

AMUX

16 PMU_AMUX_AY — TP16
TP-P55
ROOM=TEST

16 PMU_AMUX_BY — TP17
TP-P55
ROOM=TEST

MOJAVE

28 27 MESA_TO_BOOST_EN — TP18
TP-P55
ROOM=TEST

28 27 PP16V5_MESA — TP19
TP-P55
ROOM=TEST

LCM

29 PP_LCM_BL_CAT1_CONN — TP20
TP-P55
ROOM=TEST

29 PP_LCM_BL_CAT2_CONN — TP21
TP-P55
ROOM=TEST

29 PP_LCM_BL_ANODE_CONN — TP22
TP-P55
ROOM=TEST

SUPER SCREW

TP23
TP-P80
ROOM=TEST

N71 I2C DEVICE MAP

I2C BUS	DEVICE	BINARY	7-BIT HEX	8-BIT HEX
I2C0	ANTIGUA PMU	1110100X	0X74	0XE8
	CHESTNUT	0100111X	0X27	0X4E
	MUON	1100010X	0X62	0XC4
I2C1	TIGRIS	1110101X	0X75	0XEA
	ARC DRIVER	1000001X	0X41	0X82
	SPEAKER AMP	1000000X	0X40	0X80
	TRISTAR	0011010X	0X1A	0X34
I2C2	ALS	0101001X	0X29	0X52
	DISP EEPROM	1010001X	0X51	0XA2
OWL	UNUSED	N/A	N/A	N/A
ISP I2C0	REAR CAM	TBD	TBD	TBD
	LED DRIVER	1100011X	0X63	0XC6
ISP I2C1	FRONT CAM	0010000X	0X10	0X20
TOUCH I2C	MESON	1000000X	0x40	0x80
	MAMBA	1100000X	0x60	0xC0
	DOPPLER	1011000X	0x58	0xB0
SEP I2C	SEP EEPROM	1010001X	0x51	0xA2

BOOTSTRAPPING:BOARD REV
BOARD ID
BOOT CONFIG

BOARD_REV3 — R0400 ROOM=SOC 1.00K — PP1V8 1 5 6 7 8 9 12 13 14 17 20 21
01005 MF 1/32W   29 32
NOSTUFF

BOARD_REV2 — R0401 ROOM=SOC 1.00K
01005 MF 5% 1/32W
NOSTUFF

BOARD_REV1 — R0402 ROOM=SOC 1.00K
01005 MF 5% 1/32W

BOARD_REV0 — R0403 ROOM=SOC 1.00K
01005 MF 5% 1/32W

BOARD_ID4 — R0404 ROOM=SOC 1.00K
01005 MF 5% 1/32W
NOSTUFF

BOARD_ID3 — R0405 ROOM=SOC 1.00K
01005 MF 5% 1/32W
NOSTUFF

BOARD_ID2 — R0406 ROOM=SOC 1.00K
01005 MF 5% 1/32W

BOARD_ID1 — R0407 ROOM=SOC 1.00K
01005 MF 5% 1/32W
NOSTUFF

BOARD_ID0 — R0408 ROOM=SOC 1.00K
01005 MF 5% 1/32W
NOSTUFF

BOOT_CONFIG2 — R0409 ROOM=SOC 1.00K
01005 MF 5% 1/32W
NOSTUFF

BOOT_CONFIG1 — R0410 ROOM=SOC 1.00K
01005 MF 5% 1/32W
NOSTUFF

BOOT_CONFIG0 — R0411 ROOM=SOC 1.00K
01005 MF 5% 1/32W

BOARD_REV[3:0]
FLOAT=LOW, PULLUP=HIGH
1111 PROTO1
1110 PROTO2
1101 EVT
1100 EVT DOE 3 (MAMBA LDO)
1011 CARRIER
1010 CARRIER 2 (I2C0 SCL)
SELECTED --> 1001 DVT

BOARD_ID[4:0]
FLOAT=LOW, PULLUP=HIGH
SELECTED --> 00100 N71 MLB
00101 N71 DEV
00110 N66 MLB

BOOT_CONFIG[2:0]
FLOAT=LOW, PULLUP=HIGH
000 SPI0
001 SPI0 TEST MODE
010 NVME0 x2 MODE
011 NVME0 x2 TEST MODE
100 NVME0 x1 MODE
101 NVME0 x1 TEST MODE
110 SLOW SPI0 TEST MODE
111 FAST SPI0 TEST MODE
SELECTED -->

RESISTOR STUFF = HIGH '1'
RESISTOR NOSTUFF = LOW '0'

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TOP-SIDE

BOTTOM-SIDE

PENINSULA STANDOFFS

BS0506
STDOFF-2.2OD0.25H-0.50-1.70
ROOM=ASSEMBLY

BS0507
STDOFF-2.6OD0.5H-0.5-1.7-TH
ROOM=ASSEMBLY
860-8396
50 AP UAT FEED

860-7846   50 AP WIFI 5G CONN ANT

NORTH AC GND SCREW
806-02971

BS0508
2.7X1.94X0.25
RING-TH1
ROOM=ASSEMBLY

SHIM WASHER

STOCKHOLM FEED
BS0505
STDOFF-2.56OD1.4ID.99H-SM
ROOM=ASSEMBLY

860-00109

AP TO STOCKHOLM ANT

BS0503
STDOFF-2.6OD0.81H-TH
ROOM=ASSEMBLY
860-00096

FIDUCIALS

FD0501
FID
0P5SM1P0SQ-NSP
ROOM=ASSEMBLY

FD0502
FID
0P5SM1P0SQ-NSP
ROOM=ASSEMBLY

FD0503
FID
0P5SM1P0SQ-NSP
ROOM=ASSEMBLY

FD0505
FID
0P5SM1P0SQ-NSP
ROOM=ASSEMBLY

FD0510
FID
0P5SQ-SMP3SQ-NSP
ROOM=ASSEMBLY

FD0511
FID
0P5SQ-SMP3SQ-NSP
ROOM=ASSEMBLY

FD0512
FID
0P5SQ-SMP3SQ-NSP
ROOM=ASSEMBLY

FD0514
FID
0P5SQ-SMP3SQ-NSP
ROOM=ASSEMBLY

FD0515
FID
0P5SQ-SMP3SQ-NSP
ROOM=ASSEMBLY

FD0504
FID
0P5SM1P0SQ-NSP
ROOM=ASSEMBLY

BS0501
STDOFF-2.85OD1.4ID-0.84H

860-00111   860-00111

BS0502
STDOFF-2.85OD1.4ID-0.84H
ROOM=ASSEMBLY

PLATED SLOTTED THRU-HOLE
CL0502
TH-NSP
SL-1.20X0.40-1.50X0.70-NSP

UPPER SHIELD
OMIT_TABLE

SH0500
SM

SHLD-EMI-UPPER-FRONT-N61
ROOM=ASSEMBLY

UPPER SHIELD
OMIT_TABLE

SH0503
SM

SHLD-EMI-UPPER-BACK-N61
ROOM=ASSEMBLY

SOUTH DC CURRENT BLOCKING CAPS

SOUTH AC GND SCREW

C0540	C0541	C0542	C0543
220PF	100PF	56PF	4.7PF
10%	5%	5%	0.1PF
100	16V	16V	16V
X7R-CERM	NP0-C0G	NP0-C0G	NP0-C0G
01005	01005	01005	01005
ROOM=ASSEMBLY	ROOM=ASSEMBLY	ROOM=ASSEMBLY	ROOM=ASSEMBLY

NORTH DC CURRENT BLOCKING CAPS

NORTH AC GND SCREW

C0550	C0551	C0552	C0553
220PF	100PF	220PF	100PF
10%	16V	10%	16V
100		100	
X7R-CERM	NP0-C0G	X7R-CERM	NP0-C0G
01005	01005	01005	01005
ROOM=ASSEMBLY	ROOM=ASSEMBLY	ROOM=ASSEMBLY	ROOM=ASSEMBLY

DUAL RF COAX CLIP

CLIP-RETENTION-COAX-DOUBLE
CL0501
ROOM=ASSEMBLY
806-01802

FD0513
FID
0P5SQ-SMP3SQ-NSP
ROOM=ASSEMBLY

SOUTH AC GND SCREW

LOWER SHIELD
OMIT_TABLE

SH0501
SM

SHLD-EMI-LOWER-FRONT-N61
ROOM=ASSEMBLY

LOWER SHIELD
OMIT_TABLE

SH0504
SM

SHLD-EMI-LOWER-BACK-N61
ROOM=ASSEMBLY

SA SHIELD
OMIT_TABLE

SH0502
SM

SHLD-EMI-SA-N71
ROOM=ASSEMBLY

SOUTH TUBE STANDOFF

BS0500
STDOFF-2.70OD1.84ID-0.88H-TH
860-7862
ROOM=ASSEMBLY

TODO:UPDATE REF DES

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MAUI - USB, JTAG, XTAL

VDD12_PLL_LPDP:1.14-1.26V @2mA MAX
VDD12_PLL_SOC: 1.14-1.26V @12mA MAX
VDD12_PLL_CPU: 1.14-1.26V @2mA MAX

VDD18_USB: 1.71-1.89V @20mA MAX
VDD18_XTAL:1.62-1.98V @2mA MAX

R0600
0.00
0.5
1/32W
MF
01005
ROOM=SOC

PP1V2   PP1V2 PLL
VOLTAGE=1.2V

C0600   C0601   C0602   C0603
0.1UF   0.1UF   0.01UF   0.01UF
20%   20%   10%   10%
6.3V   6.3V   6.3V   6.3V
X5R-CERM   X5R-CERM   X5R   X5R
01005   01005   01005   01005
ROOM=SOC   ROOM=SOC   ROOM=SOC   ROOM=SOC

NOTE:LPDP RECEIVES UNFILTERED 1.2V
AS IT IS UNUSED

C0612
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=SOC

PP1V8 XTAL
VOLTAGE=1.8V

C0611   C0610
0.1UF   2.2UF
20%   20%
6.3V   6.3V
X5R-CERM   X5R-CERM
01005   0201
ROOM=SOC   ROOM=SOC

FL0610
1KOHM-25%-0.2A
0201
ROOM=SOC

PP1V8

PP3V3 USB

C0620
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=SOC

VDD33_USB:3.14-3.46V @5mA MAX

OMIT_TABLE
CRITICAL
U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 1 OF 14
ROOM=SOC

UH1_HSIC0_DATA
UH1_HSIC0_STB
UH2_HSIC1_DATA
UH2_HSIC1_STB
JTAG_SEL
JTAG_TRST*
JTAG_TDO
JTAG_TDI
JTAG_TMS
JTAG_TCK
COLD_RESET*
CFSB
TST_CLKOUT
S3E_RESET*
HOLD_RESET
TESTMODE
FUSE1_FSRC
FUSE2_FSRC

ANALOGMUX_OUT   AP TO PMU AMUX OUT
USB_D_P   USB AP DATA P
USB_D_N   USB AP DATA N
USB_VBUS   USB VBUS DETECT
USB_ID   NC
USB_REXT   USB REXT
AP TO PMU WDOG RESET
XI0 XTAL AP 24M IN
XO0 XTAL AP 24M OUT

SWD DOCK BI AP SWDIO
SWD DOCK TO AP SWCLK
PMU TO SYSTEM COLD RESET L
PMU TO OWL ACTIVE READY
AP TO PMU TEST CLKOUT
PP0610
AP TO NAND RESET L
WDOG

P3MM-NSM
PP0600

P3MM-NSM
PP0601

R0640
200
1%
1/32W
MF
01005
ROOM=SOC

R0650
511K
1%
1/32W
MF
01005
ROOM=SOC

OMIT_TABLE
R0651
0.00
0.5
1/32W
MF
01005
ROOM=SOC

SOC 24M O

CRITICAL
Y0600
1.60X1.20MM-SM
24.000MHZ-30PPM-9.5PF-60OHM
ROOM=SOC

C0650   C0651
12PF   12PF
5%   5%
16V   16V
CERM   CERM
01005   01005
ROOM=SOC   ROOM=SOC

XW0650
SHORT-10L-0.1MM-SM
ROOM=SOC

AP XTAL GND
VOLTAGE=0.0V

VDD12_PCIE_REFBUF:1.08-1.26V @50mA MAX
VDD12_PCIE_TXPLL: 1.08-1.32V @10mA MAX
VDD12_PCIE: 1.14-1.26V @115mA MAX

XW0740
SHORT-10L-0.1MM-SM
XW TO ISOLATE C0442,3 FROM C0740,1.

PP1V2
PP1V2_XW
VOLTAGE=1.2V

VDD085_PCIE:0.802-TBDV @TBDmA MAX
PP FIXED

C0740
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SOC

C0741
1.0UF
20%
6.3V
X5R
0201-1
ROOM=SOC

C0742
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=SOC

C0743
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=SOC

C0752
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=SOC

C0751
1.0UF
20%
6.3V
X5R
0201-1
ROOM=SOC

C0750
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SOC

C0731
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=SOC

PCIE EXT C   AP29   PCIE_EXT_C

OMIT_TABLE
CRITICAL
U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 2 OF 14
ROOM=SOC

PCIE LINK 0

PCIE NAND TO AP RXD0 P
PCIE NAND TO AP RXD0 N
C0701 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
C0702 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
PCIE NAND TO AP RXD0 C P   AM30   PCIE_RX0_P
PCIE NAND TO AP RXD0 C N   AN30   PCIE_RX0_N

PCIE AP TO NAND TXD0 P
PCIE AP TO NAND TXD0 N
C0703 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
C0704 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
PCIE AP TO NAND TXD0 C P   AT32   PCIE_TX0_P
PCIE AP TO NAND TXD0 C N   AR32   PCIE_TX0_N

PCIE NAND TO AP RXD1 P
PCIE NAND TO AP RXD1 N
C0705 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
C0706 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
PCIE NAND TO AP RXD1 C P   AM28   PCIE_RX1_P
PCIE NAND TO AP RXD1 C N   AN28   PCIE_RX1_N

PCIE AP TO NAND TXD1 P
PCIE AP TO NAND TXD1 N
C0707 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
C0708 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
PCIE AP TO NAND TXD1 C P   AT31   PCIE_TX1_P
PCIE AP TO NAND TXD1 C N   AR31   PCIE_TX1_N

PCIE LINK 1

PCIE WLAN TO AP RXD P
PCIE WLAN TO AP RXD N
C0709 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
C0710 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
PCIE WLAN TO AP RXD C P   AM27   PCIE_RX2_P
PCIE WLAN TO AP RXD C N   AN27   PCIE_RX2_N

PCIE AP TO WLAN TXD P
PCIE AP TO WLAN TXD N
C0711 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
C0712 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
PCIE AP TO WLAN TXD C P   AT28   PCIE_TX2_P
PCIE AP TO WLAN TXD C N   AR28   PCIE_TX2_N

PCIE LINK 2

PCIE BB TO AP RXD P
PCIE BB TO AP RXD N
C0715 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
C0716 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
PCIE BB TO AP RXD C P   AM26   PCIE_RX3_P
PCIE BB TO AP RXD C N PCIE_RX_TX_BYPASS_CLK_N   AN26   PCIE_RX3_N

PCIE AP TO BB TXD P
PCIE AP TO BB TXD N
C0717 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
C0718 0.1UF ROOM=SOC X5R-CERM 01005 6.3V 20%
PCIE AP TO BB TXD C P   AT26   PCIE_TX3_P
PCIE AP TO BB TXD C N   AR26   PCIE_TX3_N

NC   AM25   PCIE_RX4_P
NC   AN25   PCIE_RX4_N

NC   AR24   PCIE_TX4_P
NC   AT24   PCIE_TX4_N

PCIE REF_CLK0_P   AN35   PCIE AP TO NAND REFCLK P
PCIE REF_CLK0_N   AP35   PCIE AP TO NAND REFCLK N

PCIE REF_CLK1_P   AN34   PCIE AP TO WLAN REFCLK P
PCIE REF_CLK1_N   AP34   PCIE AP TO WLAN REFCLK N

PCIE REF_CLK2_P   AM32   PCIE AP TO BB REFCLK P
PCIE REF_CLK2_N   AN32   PCIE AP TO BB REFCLK N

PCIE REF_CLK3_P   AM31   NC
PCIE REF_CLK3_N   AN31   NC

PP1V8

NOSTUFF
R0720 100K 5% 1/32W MF 01005 ROOM=SOC
R0721 100K 5% 1/32W MF 01005 ROOM=SOC
R0722 100K 5% 1/32W MF 01005 ROOM=SOC

PCIE_CLKREQ0*   AT11   PCIE NAND TO AP CLKREQ L
PCIE_CLKREQ1*   AP12   PCIE WLAN TO AP CLKREQ L
PCIE_CLKREQ2*   AR12   PCIE BB BI AP CLKREQ L
PCIE_CLKREQ3*   AT12   NC

NOTE:CLKREQ_L PULL-UP FOR BB IN RADIO_MLB_MIMO SECTION

PCIE_PERST0*   AR10   PCIE AP TO NAND RESET L
PCIE_PERST1*   AT10   PCIE AP TO WLAN RESET L
PCIE_PERST2*   AP11   PCIE AP TO BB RESET L
PCIE_PERST3*   AR11   NC

R0700 100K 5% 1/32W MF 01005 ROOM=SOC
R0701 100K 5% 1/32W MF 01005 ROOM=SOC
R0702 100K 5% 1/32W MF 01005 ROOM=SOC

PCIE_EXT_REF_CLK_P   AR33
PCIE_EXT_REF_CLK_N   AT33

PCIE_RX_TX_BYPASS_CLK_P   AT29
                           AR29

PCIE_RCAL_P   AT30   PCIE RCAL P
PCIE_RCAL_N   AR30   PCIE RCAL N

OMIT_TABLE
R0730 100 1% 1/32W MF 01005 ROOM=SOC

OMIT_TABLE
C0730 100PF 5% 16V NP0-COG ROOM=SOC

MAUI - CAMERA & DISPLAY INTERFACES

0.756-0.893V @11mA MAX
14 11 6 PP FIXED

1.62-1.98V @23mA MAX
PP1V8 1 5 6 7 8 9 12 13 14 17 20 21
29 33

C0814
0.1UF
20%
16V
X5R-CERM
01005
ROOM=SOC

C0801
0.1UF
20%
16V
X5R-CERM
01005
ROOM=SOC

C0802
0.1UF
20%
16V
X5R-CERM
01005
ROOM=SOC

C0815
0.1UF
20%
16V
X5R-CERM
01005
ROOM=SOC

NOTE:VDD12_LPDP SHOULD BE POWERED
EVEN WHEN LPDP IS NOT USED

15 6 5 PP1V2

E10 E13 E8 D13   E7 D8 E11 E14

VDDO85_MIPI   VDD18_MIPI

E23 E25 E27 F24

VDD12_LPDP

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 3 OF 14
CRITICAL
ROOM=SOC

PP1V8 3 5 6 7 8 9 12 13 14 17 20 21
29 33

R0804
1.00K
5%
1/32W
MF
01005
ROOM=SOC

R0805
1.00K
5%
1/32W
MF
01005
ROOM=SOC

R0806
1.00K
5%
1/32W
MF
01005
ROOM=SOC

R0807
1.00K
5%
1/32W
MF
01005
ROOM=SOC

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 4 OF 14
CRITICAL
ROOM=SOC

Signal	Pin
MIPI RCAM TO AP DATA0 CONN P	B8 MIPI0C_DATA0_P
MIPI RCAM TO AP DATA0 CONN N	A8 MIPI0C_DATA0_N
MIPI RCAM TO AP DATA1 CONN P	A9 MIPI0C_DATA1_P
MIPI RCAM TO AP DATA1 CONN N	B9 MIPI0C_DATA1_N
MIPI RCAM TO AP DATA2 CONN P	A13 MIPI0C_DATA2_P
MIPI RCAM TO AP DATA2 CONN N	B13 MIPI0C_DATA2_N
MIPI RCAM TO AP DATA3 CONN P	B14 MIPI0C_DATA3_P
MIPI RCAM TO AP DATA3 CONN N	A14 MIPI0C_DATA3_N
MIPI RCAM TO AP CLK CONN P	A12 MIPI0C_CLK_P
MIPI RCAM TO AP CLK CONN N	B12 MIPI0C_CLK_N
RCAM REXT	D12 MIPI0C_REXT
MIPI AP TO LCM DATA0 P	A3 MIPID_DATA0_P
MIPI AP TO LCM DATA0 N	B3 MIPID_DATA0_N
MIPI AP TO LCM DATA1 P	B4 MIPID_DATA1_P
MIPI AP TO LCM DATA1 N	A4 MIPID_DATA1_N

ISP_I2C0_SCL G31   I2C ISP TO RCAM SCL   OUT 21 22
ISP_I2C0_SDA G32   I2C ISP BI RCAM SDA   BI 21 22
ISP_I2C1_SCL F35   I2C ISP TO FCAM SCL   OUT 20
ISP_I2C1_SDA G34   I2C ISP BI FCAM SDA   BI 20

SENSOR0_CLK D33   AP TO RCAM CLK R
SENSOR0_RST D32   AP TO RCAM SHUTDOWN L   OUT 21

R0808
33.2
1% MF   1/32W
01005
ROOM=SOC
AP TO RCAM CLK   OUT 21

SENSOR1_CLK F33   AP TO FCAM CLK R
SENSOR1_RST E34   AP TO FCAM SHUTDOWN L   OUT 20

R0809
33.2
1% MF   1/32W
01005
ROOM=SOC
AP TO FCAM CLK   OUT 20

SENSOR0_ISTRB D34 NC
SENSOR0_XSHUTDOWN F32   AP TO STOCKHOLM DWLD REQUEST   OUT 33
SENSOR1_ISTRB C35 NC
SENSOR1_XSHUTDOWN C34   AP TO MUON BL STROBE EN   OUT 27
MIPICSI_MUXSEL G35 NC
MIPI1C_REXT D14   FCAM REXT

NC B6 MIPID_DATA2_P
NC A6 MIPID_DATA2_N
NC A7 MIPID_DATA3_P
NC B7 MIPID_DATA3_N

MIPI AP TO LCM CLK P A5 MIPID_CLK_P
MIPI AP TO LCM CLK N B5 MIPID_CLK_N
LCM REXT D9 MIPID_REXT

MIPI1C_DATA0_P B17   MIPI FCAM TO AP DATA0 P   IN 20
MIPI1C_DATA0_N A17   MIPI FCAM TO AP DATA0 N   IN 20
MIPI1C_DATA1_P B19   MIPI FCAM TO AP DATA1 P   IN 20
MIPI1C_DATA1_N A19   MIPI FCAM TO AP DATA1 N   IN 20
MIPI1C_CLK_P A18   MIPI FCAM TO AP CLK P   IN 20
MIPI1C_CLK_N B18   MIPI FCAM TO AP CLK N   IN 20

NC A29 LPDP_AUX_P
NC B29 LPDP_AUX_N
NC A33 LPDP_TX0_P
NC B33 LPDP_TX0_N
NC A32 LPDP_TX1_P
NC B32 LPDP_TX1_N
NC A31 LPDP_TX2_P
NC B31 LPDP_TX2_N
NC A30 LPDP_TX3_P
NC B30 LPDP_TX3_N
NC A24 LPDP_CAL_DRV_OUT
NC A25 LPDP_CAL_VSS_EXT
NC L4 EDP_HPD
NC J35 DP_WAKEUP

R0801
4.02K
1%
1/32W
MF
01005
ROOM=SOC

R0802
4.02K
1%
1/32W
MF
01005
ROOM=SOC

R0803
4.02K
1%
1/32W
MF
01005
ROOM=SOC

SYNC_MASTER=N/A   SYNC_DATE=N/A
PAGE TITLE
SOC:CAMERA & DISPLAY

Apple Inc.

DRAWING NUMBER	SIZE
051-1902	D

REVISION
A.0.0

BRANCH

PAGE
8 OF 49

SHEET
7 OF 59

MAUI - GPIO & SERIAL INTERFACES

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 5 OF 14
CRITICAL
ROOM=SOC
OMIT_TABLE

Signal	Pin	GPIO
AP TO HP HS3 CTRL	C1	GPIO_0
AP TO HP HS4 CTRL	D2	GPIO_1
BUTTON VOL UP L	D1	GPIO_2
BUTTON VOL DOWN L	F1	GPIO_3
SPEAKERAMP TO AP INT L	E2	GPIO_4
AP TO SPEAKERAMP STAYIN ALIVE	F3	GPIO_5
AP TO SPEAKERAMP RESET L	F2	GPIO_6
AP TO BT WAKE	H3	GPIO_7
AP TO BB RESET L	G3	GPIO_8
PCIE AP TO WLAN DEV WAKE	J1	GPIO_9
AP TO LED DRIVER EN	H4	GPIO_10
AP TO TOUCH RESET L	K1	GPIO_11
AP TO LCM RESET L	J3	GPIO_12
PMU TO AP IRQ L	K2	GPIO_13
AP TO BB PCIE DEV WAKE	J4	GPIO_14
AP TO STOCKHOLM DEV WAKE	L2	GPIO_15
BOARD ID3	K3	GPIO_16
NC AP TO STOCKHOLM SIM SEL	L3	GPIO_17
BOOT CONFIG0	N1	GPIO_18
AP TO ARC RESET L	AH2	GPIO_19
LCM TO OWL BSYNC	AH3	GPIO_20
ARC TO AP INT L	AH4	GPIO_21
BB TO AP GPS TIME MARK (AP TO BB)	AJ1	GPIO_22
AP TO ARC STAYIN ALIVE	AJ2	GPIO_23
BB TO AP RESET DETECT L	AJ3	GPIO_24
BOOT CONFIG1	AJ4	GPIO_25
FORCE DFU	AK1	GPIO_26
DFU STATUS	AP3	GPIO_27
BOOT CONFIG2	AN4	GPIO_28
BOARD ID4	AP4	GPIO_29
CODEC TO AP PMU INT L	AP5	GPIO_30
AP TO BB RADIO ON L	AR2	GPIO_31
AP TO NAND FW STRAP	AR3	GPIO_32
TOUCH TO AP INT L	AR4	GPIO_33
BOARD REV3	AP6	GPIO_34
BOARD REV2	AT3	GPIO_35
BOARD REV1	AT4	GPIO_36
BOARD REV0	AR6	GPIO_37
AP TO BB COREDUMP	AP7	GPIO_38
BB IPC GPIO	AT5	GPIO_39
BUTTON RINGER A	AP8	GPIO_40
AP TO BB MESA UP L	AP9	GPIO_41
MAMBA EXT LDO EN	AP10	GPIO_42

TMR32_PWM0 AF5 NC
TMR32_PWM1 AE5 NC
TMR32_PWM2 AF6 NC

UART0_RXD AE3 UART AP DEBUG RXD
UART0_TXD AE4 UART AP DEBUG TXD

UART1_CTS* K31 UART BT TO AP CTS L
UART1_RTS* K32 UART BT TO AP RTS L
UART1_RXD L33 UART BT TO AP RXD
UART1_TXD L32 UART BT TO AP TXD

UART2_CTS* AT23 NC
UART2_RTS* AR20 CAM EXT LDO EN
UART2_RXD AR22 NC
UART2_TXD AT22 NC

UART3_CTS* N4 UART STOCKHOLM TO AP CTS L
UART3_RTS* P3 UART AP TO STOCKHOLM RTS L
UART3_RXD R3 UART STOCKHOLM TO AP RXD
UART3_TXD R2 UART AP TO STOCKHOLM TXD

UART4_CTS* J33 UART WLAN TO AP CTS L
UART4_RTS* J34 UART AP TO WLAN RTS L
UART4_RXD J35 UART WLAN TO AP RXD
UART4_TXD K33 UART AP TO WLAN TXD

UART5_RTXD T32 SWI AP BI TIGRIS

UART6_RXD AF1 UART ACCESSORY TO AP RXD
UART6_TXD AE2 UART AP TO ACCESSORY TXD

UART7_RXD J31
UART7_TXD J32 NC

I2S (U0600 SYM 6 OF 14)

I2S AP TO CODEC MCLK
I2S AP TO ARC MCLK
I2S AP TO SPEAKERAMP MCLK

R0920 33.2 1/32W MF 01005 ROOM=SOC

Signal	Pin	Port
I2S AP TO CODEC MCLK R	P34	I2S0_MCK
I2S AP OWL TO CODEC XSP BCLK	R34	I2S0_BCLK
I2S AP OWL TO CODEC XSP LRCLK	N34	I2S0_LRCK
I2S CODEC TO AP OWL XSP DIN	N35	I2S0_DIN
I2S AP TO CODEC XSP DOUT	M33	I2S0_DOUT

R0921 33.2 1/32W MF 01005 ROOM=SOC

I2S AP TO ARC MCLK R	M4	I2S1_MCK
I2S AP TO BT BCLK	M3	I2S1_BCLK
I2S AP TO BT LRCLK	P1	I2S1_LRCK
I2S BT TO AP DIN	N3	I2S1_DIN
I2S AP TO BT DOUT	L4	I2S1_DOUT

R0922 33.2 1/32W MF 01005 ROOM=SOC

I2S AP TO SPEAKERAMP MCLK R	U32	I2S2_MCK
I2S AP TO CODEC ASP BCLK	V33	I2S2_BCLK
I2S AP TO CODEC ASP LRCLK	U33	I2S2_LRCK
I2S CODEC TO AP ASP DIN	T33	I2S2_DIN
I2S AP TO CODEC ASP DOUT	V34	I2S2_DOUT

ALS TO AP INT L	AM3	I2S3_MCK
I2S AP TO BB BCLK	AM4	I2S3_BCLK
I2S AP TO BB LRCLK	AN2	I2S3_LRCK
I2S BB TO AP DIN	AP1	I2S3_DIN
I2S AP TO BB DOUT	AN1	I2S3_DOUT

TRISTAR TO AP INT	R32	I2S4_MCK
I2S AP TO CODEC MSP BCLK	R31	I2S4_BCLK
I2S AP TO CODEC MSP LRCLK	V32	I2S4_LRCK
I2S CODEC TO AP MSP DIN	P31	I2S4_DIN
I2S AP TO CODEC MSP DOUT	P32	I2S4_DOUT

BOARD ID2	AD4	SPI0_MISO
BOARD ID1	AC3	SPI0_MOSI
BOARD ID0	AB2	SPI0_SCLK
NC	AD3	SPI0_SSIN

SPI CODEC TO AP MISO	P33	SPI1_MISO
SPI AP TO CODEC MOSI	V35	SPI1_MOSI
SPI AP TO CODEC SCLK	N32	SPI1_SCLK
SPI AP TO CODEC CS L	M31	SPI1_SSIN

SPI TOUCH TO AP MISO	E33	SPI2_MISO
SPI AP TO TOUCH MOSI	E35	SPI2_MOSI
SPI AP TO TOUCH SCLK R	F34	SPI2_SCLK
SPI AP TO TOUCH CS L	F31	SPI2_SSIN

SPI MESA TO AP MISO	AA2	SPI3_MISO
SPI AP TO MESA MOSI	Y2	SPI3_MOSI
SPI AP TO MESA SCLK R	AA3	SPI3_SCLK
MESA TO AP INT	AC4	SPI3_SSIN

CPU_ACTIVE_STATUS H31 NC
CLK32K_OUT H34 AP TO TOUCH CLK32K RESET L
NAND_SYS_CLK AM24 AP TO NAND SYS CLK R

R0960 0.00 1/32W MF 01005 ROOM=SOC
SPI AP TO TOUCH SCLK

R0930 0.00 1/32W MF 01005 ROOM=SOC
SPI AP TO MESA SCLK

PP0906 P2MM-NSM ROOM=SOC

U0600 FCMSP SC58980B0B-A040 MAUI-2GB-25NM-DDR-H CRITICAL ROOM=SOC (SYM on right)

Signal	Pin	Port
I2C0 AP SCL	E31	I2C0_SCL
I2C0 AP SDA	D35	I2C0_SDA
I2C1 AP SCL	AH1	I2C1_SCL
I2C1 AP SDA	AG4	I2C1_SDA
I2C2 AP SCL	L31	I2C2_SCL
I2C2 AP SDA	M32	I2C2_SDA

SEP_SPI0_SCLK W3 NC
SEP_SPI0_MISO AA1 NC
SEP_SPI0_MOSI U2 NC

SEP_I2C_SCL V3 I2C SEP TO EEPROM SCL
SEP_I2C_SDA Y4 I2C SEP BI EEPROM SDA

SEP_GPIO0 Y3 NC
SEP_GPIO1 AB4 NC

SOCHOT0 AM1 PMU TO AP SOCHOT0 R L
SOCHOT1 AM2

Pull-up / bus resistors (top)

PP1V8

R0900	R0901	R0902	R0903	R0904	R0905
1.00K	2.2K	2.2K	2.2K	1.33K	1.33K
1/32W	5%	5%	5%	1%	1%
MF	1/32W	1/32W	1/32W	1/32W	1/32W
01005	MF	MF	MF	MF	MF
ROOM=SOC	01005	01005	01005	01005	01005
	ROOM=SOC	ROOM=SOC	ROOM=SOC	ROOM=SOC	ROOM=SOC

R0906 2.2K 5% 1/32W MF 01005 ROOM=SOC
R0907 2.2K 5% 1/32W MF 01005 ROOM=SOC

R0941 10K 5% 1/32W MF 01005 ROOM=SOC
R0910 10K 5% 1/32W MF 01005 ROOM=SOC NOSTUFF
R0909 10K 5% 1/32W MF 01005 ROOM=SOC

R0940 0.00 0% 1/32W MF 01005 PMU TO AP SOCHOT0 L
AP TO PMU SOCHOT1 L

R0945 0.00 0% 1/32W MF 01005 ROOM=SOC AP TO NAND SYS CLK

I2C0 AP SCL
I2C0 AP SDA
I2C1 AP SCL
I2C1 AP SDA
I2C2 AP SCL
I2C2 AP SDA

ANALOG_PROX
PP1V8
R0911 1.00K 5% 1/32W MF 01005 ROOM=SOC
PROX SELECT
IN

PIN J31 (UART7_RXD) SHOULD BE
BRIEFLY SWITCHED TO PD TO CHECK STATE.
STUFF R0911 FOR ANALOG PROX.
NOSTUFF R0911 FOR DOPPLER PROX.

ANTI-ROLLBACK EEPROM
128kbit
APN:335S0946

PP1V8
C0900 1.0UF 20% 6.3V X5R 0201-1 ROOM=SOC
CRITICAL
ROOM=SOC

U0900 M34128-FCS6 P/T
VCC A1
SCL B1 WLCSP A2
SDA C2 VSS
I2C SEP BI EEPROM SDA
I2C SEP TO EEPROM SCL

BUTTON PULL-UP RESISTORS

DEFAULT_RESISTOR_XD803UNDE_1
PP1V8_SDRAM

R0950 191K 1% 1/32W MF 01005 ROOM=SOC
R0951 100K 5% 1/32W MF 01005 ROOM=SOC

BUTTON MENU KEY L
BUTTON RINGER A

PP1V8 ALWAYS
R0952 220K 5% 1/32W MF 01005 ROOM=SOC
BUTTON HOLD KEY L

I2C PROBE POINTS

	Probe
I2C0 AP SCL	PP0900
I2C0 AP SDA	PP0901
I2C1 AP SCL	PP0902
I2C1 AP SDA	PP0903
I2C2 AP SCL	PP0904
I2C2 AP SDA	PP0905

P3MM-NSM
ROOM=SOC

MAUI - OWL

POWER STATE CONTROL PROBE POINTS

ROOM=SOC
P3MM-NSM
30 27 16 9 5   PMU TO OWL ACTIVE READY   1 SM PP PP1021

ROOM=SOC
P3MM-NSM
16 11 9   PMU TO OWL SLEEP1 READY   1 SM PP PP1023

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 7 OF 14

OMIT_TABLE
CRITICAL
ROOM=SOC

Left signals	Pin	Port
OWL TO PMU SLEEP1 REQUEST	AD30	OWL_DDR_REQ
PMU TO OWL SLEEP1 READY	AB33	OWL_DDR_RESET*
SPI OWL TO COMPASS CS L	AF35	OWL_FUNC_0
COMPASS TO OWL INT	AH32	OWL_FUNC_1
DISCRETE ACCEL TO OWL INT2	AG32	OWL_FUNC_2
ACCEL GYRO TO OWL INT1	AG31	OWL_FUNC_3
SPI OWL TO ACCEL GYRO CS L	AG30	OWL_FUNC_4
ACCEL GYRO TO OWL INT2	AF33	OWL_FUNC_5
SPI OWL TO PHOSPHOROUS CS L	AE34	OWL_FUNC_6
LCM TO OWL BSYNC	AF34	OWL_FUNC_7
OWL TO PMU SHDN BI TIGRIS SWI	AF31	OWL_FUNC_8
PHOSPHORUS TO OWL IRQ	AF32	OWL_FUNC_9
SPI OWL TO DISCRETE ACCEL CS L	AH31	OWL_I2CM_SCL
DISCRETE ACCEL TO OWL INT1	AH33	OWL_I2CM_SDA
SPI IMU TO OWL MISO	AK31	OWL_SPI_MISO
SPI OWL TO IMU MOSI	AK32	OWL_SPI_MOSI
SPI OWL TO IMU SCLK	AL33	OWL_SPI_SCLK
UART BB TO OWL RXD	AJ32	OWL_UART0_RXD
UART OWL TO BB TXD	AK33	OWL_UART0_TXD
OWL TO WLAN CONTEXT B	AH30	OWL_UART1_RXD
OWL TO WLAN CONTEXT A	AJ31	OWL_UART1_TXD
TOUCH TO OWL ACCEL DATA REQUEST	AJ34	OWL_UART2_RXD
UART OWL TO TOUCH TXD	AJ33	OWL_UART2_TXD
I2S AP OWL TO CODEC XSP BCLK	AD34	OWL_I2S_BCLK
I2S CODEC TO AP OWL XSP DIN	AA34	OWL_I2S_DIN
NC AE32		OWL_I2S_MCK
I2S AP OWL TO CODEC XSP LRCLK	AE31	

Port	Pin	Right signals
CFSB_AOP	W33	PMU TO SYSTEM COLD RESET L
AWAKE_REQ	AA33	OWL_TO_PMU_ACTIVE_REQUEST
AWAKE_RESET*	AD32	PMU_TO_OWL_ACTIVE_READY
PMGR_MISO	AL2	DWI PMU TO PMGR MISO
PMGR_MOSI	AL1	DWI PMGR TO PMU BACKLIGHT MOSI
PMGR_SCLK0	AK4	DWI PMGR TO PMU SCLK
PMGR_SSCLK1	AL3	DWI PMGR TO BACKLIGHT SCLK
RT_CLK32768	AD31	PMU_TO_OWL_CLK32K
OWL_SWD_TCK_OUT	AE33	SWD AP PERIPHERAL SWCLK
OWL_SWD_TMS0	AD33	NC
OWL_SWD_TMS1	AC33	SWD AP BI BB SWDIO
SWD_TMS2	U31	SWD AP BI NAND SWDIO
SWD_TMS3	T33	NC
HOLD_KEY*	U3	BUTTON HOLD KEY L
SKEY*	W4	NC
MENU_KEY*	V4	BUTTON MENU KEY L

1 SM PP PP1002
P2MM-NSM

PP1V8
NOSTUFF
1 R1002
1.00K
5%
1/32W
MF
01005
ROOM=SOC

OWL SYSTEM SHUTDOWN OPTION

NOSTUFF
R1020
10
MF 5%   2 1/32W
01005
ROOM=SOC
SWI AP BI TIGRIS

OWL TO PMU SHDN BI TIGRIS SWI

NOSTUFF
R1021
10
MF 5%   2 1/32W
01005
ROOM=SOC
OWL TO PMU SHDN

SYNC_MASTER=N/A   SYNC_DATE=N/A
PAGE TITLE
SOC:OWL

Apple Inc.

DRAWING NUMBER
051-1902   SIZE D
REVISION
A.0.0
BRANCH

PAGE
10 OF 49
SHEET
9 OF 59

MAUI - CPU, GPU & SOC RAILS

PP GPU
0.8V @10.5A MAX

PP CPU
0.625V @TBDA MAX
0.9V @10.5A MAX
1.0V @12.5A MAX

PP SOC
0.825V @4.7A MAX
0.725V @TBDA MAX

TP1120
0.50MM
PP GPU

TP1100
0.50MM
PP CPU

XW1110
SHORT-10L-0.1MM-SM
BUCK1 PP GPU FB

XW1100
SHORT-10L-0.1MM-SM
BUCK0 PP CPU FB

XW1120
SHORT-10L-0.1MM-SM
BUCK2 PP SOC FB

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 8 OF 14
CRITICAL
ROOM=SOC
OMIT_TABLE

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 9 OF 14
CRITICAL
ROOM=SOC
OMIT_TABLE

VDD_CPU
VDD_GPU
VDD_SOC
VSS

VDD_SOC_SENSE
VSS_SOC_SENSE

PP1100 P2MM-NSM AP CPU SENSE P VDD_CPU_SENSE
PP1101 P2MM-NSM AP CPU SENSE N VSS_CPU_SENSE
PP1102 P2MM-NSM AP GPU SENSE N
         AP GPU SENSE P
VDD_GPU_SENSE
VSS_GPU_SENSE

AP SOC SENSE N P2MM-NSM PP1104
AP SOC SENSE P P2MM-NSM PP1105

NOTE:AP_GPU_SENSE_P PROBE LOCATION @ R2205.2

Capacitors C1100, C1101, C1103, C1104, C1105
Capacitors C1106–C1111, C1112–C1117
Capacitors C1120–C1125, C1126–C1131, C1132–C1137, C1138–C1141
Capacitors C1150, C1151, C1153–C1157

MAUI - POWER SUPPLIES

DDR IMPEDANCE CONTROL

1.06 - 1.17V @635mA MAX
INTERNALLY SUPPLIES VDDQ

PP1V1

PP1V1

R1200 R1201 R1202 R1203 R1204 R1205
240 240 240 240 240 240
1% 1% 1% 1% 1% 1%
1/32W 1/32W 1/32W 1/32W 1/32W 1/32W
MF MF MF MF MF MF
01005 01005 01005 01005 01005 01005
ROOM=SOC ROOM=SOC ROOM=SOC ROOM=SOC ROOM=SOC ROOM=SOC

C1240 C1241 C1242 C1243 C1244 C1248
10UF 2.2UF 2.2UF 2.2UF 2.2UF 2.2UF
20% 20% 20% 20% 20% 20%
6.3V 6.3V 6.3V 6.3V 6.3V 6.3V
CERM-X5R X5R-CERM X5R-CERM X5R-CERM X5R-CERM X5R-CERM
0402-9 0201 0201 0201 0201 0201
ROOM=SOC ROOM=SOC ROOM=SOC ROOM=SOC ROOM=SOC ROOM=SOC

ROOM=SOC ROOM=SOC ROOM=SOC
C1245 C1246 C1247
4.3UF 1UF 0.47UF
20% 20% 20%
4V 6.3V 6.3V
CERM CERM CERM
0402 0402 0402

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 11 OF 14
ROOM=SOC
CRITICAL
OMIT_TABLE

DDR0_RREF C21 DDR0 RREF
DDR1_RREF AP17 DDR1 RREF
DDR2_RREF V31 DDR2 RREF
DDR3_RREF P5 DDR3 RREF

DDR0_ZQ B21 DDR0 ZQ
DDR3_ZQ P2 DDR3 ZQ

DDR0_RET* C18 PMU TO OWL SLEEP1 READY
DDR1_RET* AP15
DDR2_RET* Y31
DDR3_RET* U4

1.1V @7mA MAX
FL1280
100OHM-25%-0.12A

F19 PP1V1 DDR PLL
VDDIO11_PLL_DDR AK18 VOLTAGE=1.1V PP1V1
W26
P8
C1280
0.22UF
20%
6.3V
X5R
01005-1
ROOM=SOC

0.802-TBDV @1.1A MAX
PP FIXED

C1200 C1201 C1202 C1203
10UF 4.3UF 1UF 0.47UF
20% 20% 20% 20%
6.3V 4V 4V 4V
CERM-X5R CERM CERM CERM
0402-9 0402 0402 0402
ROOM=SOC

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040

SYM 10 OF 14
CRITICAL
ROOM=SOC
OMIT_TABLE

VDD_CPU_SRAM

0.8V @TBDA MAX
0.9V @TBDA MAX
1.0V @1.0A MAX
PP CPU SRAM

ROOM=SOC ROOM=SOC ROOM=SOC
C1220 C1221 C1222 C1223
0.47UF 1UF 4.3UF 2.2UF
20% 20% 20% 20%
6.3V 4V 4V 6.3V
CERM CERM CERM X5R-CERM
0402 0402 0402 0201
ROOM=SOC

D19 PP1V1 SDRAM
VDDIO11_RET_DDR AN17 1.06 - 1.17V
W31
T4

0.8V @0.5A MAX
PP GPU SRAM

VDD_GPU_SRAM

ROOM=SOC ROOM=SOC ROOM=SOC
C1224 C1225 C1226 C1227
4.3UF 1UF 4.3UF 2.2UF
20% 20% 20% 20%
4V 4V 4V 6.3V
CERM CERM CERM X5R-CERM
0402 0402 0402 0201
ROOM=SOC

DDR0_SYS_ALIVE C19 SYSTEM ALIVE
DDR1_SYS_ALIVE AP16
DDR2_SYS_ALIVE W32
DDR3_SYS_ALIVE T3

VDDIO11_DDR0
VDDIO11_DDR1
VDDIO11_DDR2
VDDIO11_DDR3

VDD_FIXED

W2

0.756-TBDV @44mA MAX
PP0V8 OWL

C1250
1.0UF
20%
6.3V
X5R
0201-1
ROOM=SOC

VDD_LOW

MAUI - POWER SUPPLIES

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 13 OF 14
CRITICAL
ROOM=SOC
OMIT_TABLE

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 14 OF 14
CRITICAL
ROOM=SOC
OMIT_TABLE

U0600
MAUI-2GB-25NM-DDR-H
FCMSP
SC58980B0B-A040
SYM 12 OF 14
CRITICAL
ROOM=SOC
OMIT_TABLE

1.70-1.95V @100mA(TBD) MAX
PP1V8 SDRAM
33 31 30 27 24 16 15 14 8

VDD1

C1300
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SOC

C1301
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SOC

C1302
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SOC

1.06-1.17V @1.3A(TBD) MAX
PP1V1 SDRAM
15 14 11

VDD2

C1310
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=SOC

C1312
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SOC

C1313
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SOC

C1314
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SOC

C1311 (2.2UF) MOVED TO PP1V1
TO HELP WITH DDR PI (SAME AS N66).

ROOM=SOC
C1316
1UF
20%
4V
CERM
0402

ROOM=SOC
C1317
1UF
20%
4V
CERM
0402

1.62-1.98V @41mA MAX
PP1V8
21 20 17 14 13 12 9 8 7 6 5 1

VDDIO18_GRP1

C1320
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=SOC

C1321
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SOC

C1322
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SOC

C1323
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SOC

VDDIO18_GRP2
VDDIO18_GRP3
VDDIO18_GRP4

VDDIO18_GRP10:1.62-1.98V @8mA MAX
VDDIO18_LPOSC:1.62-1.98V @1mA MAX
PP1V8 IMU OWL
19 14

VDDIO18_GRP10 (OWL)
VDDIO18_GRP11 (AON)

PP1V8 ALWAYS   1.62-1.98V @1mA MAX
17 15 8

VDD18_LPOSC
VDD18_FMON
VDD18_UVD
VDD18_AMUX

PP1V8
21 20 17 14 13 12 9 8 7 6 5 1

VDD18_FMON :1.62-1.98V @1mA MAX
VDD18_UVD :1.62-1.98V @5mA MAX
VDD18_AMUX :1.62-1.98V @1mA MAX
VDD18_TSADC:1.645-1.89V @2mA MAX

C1330
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SOC

VDD18_TSADC

VSS

SYNC_MASTER=N/A
SYNC_DATE=N/A
PAGE TITLE
SOC:POWER (3/3)
DRAWING NUMBER
051-1902
SIZE D
REVISION
A.0.0
BRANCH

Apple Inc.

S3E NAND

PP1V8

R1530
24.9
1%
1/32W
MF
01005

PP1V8_NAND_AVDD
VOLTAGE=1.8V

C1530
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=NAND

C1531
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=NAND

NAND_AGND
VOLTAGE=0V

C1534
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=NAND

C1520
15UF
20%
6.3V
X5R
0402-1
ROOM=NAND

C1521
15UF
20%
6.3V
X5R
0402-1
ROOM=NAND

C1522
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=NAND

C1524
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=NAND

C1525
100PF
5%
16V
NP0-C0G
01005
ROOM=NAND

C1523
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=NAND

PP3V0_NAND

C1532
1.0UF
20%
6.3V
X5R
0201-1
ROOM=NAND

C1526
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=NAND

C1527
1.0UF
20%
6.3V
X5R
0201-1
ROOM=NAND

C1528
220PF
10%
16V
X7R-CERM
01005
ROOM=NAND

C1529
33PF
5%
16V
NP0-C0G-CERM
01005
ROOM=NAND

C1533
8.2PF
+/-0.5PF
16V
NP0-C0G-CERM
01005
ROOM=NAND

EXTRA CAPS ADDED
FOR UF BLOCKING
AND DESENSE
MITIGATION.

C1500
15UF
20%
6.3V
X5R
0402-1
ROOM=NAND

C1501
15UF
20%
6.3V
X5R
0402-1
ROOM=NAND

C1502
15UF
20%
6.3V
X5R
0402-1
ROOM=NAND

C1503
15UF
20%
6.3V
X5R
0402-1
ROOM=NAND

EXTRA CAPS ADDED
FOR UF BLOCKING
AND DESENSE
MITIGATION.

PP0V9_NAND

C1548
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=NAND

C1540
15UF
20%
6.3V
X5R
0402-1
ROOM=NAND

C1541
15UF
20%
6.3V
X5R
0402-1
ROOM=NAND

C1542
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=NAND

C1543
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=NAND

C1546
1.0UF
20%
6.3V
X5R
0201-1
ROOM=NAND

C1547
1.0UF
20%
6.3V
X5R
0201-1
ROOM=NAND

C1504
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=NAND

C1506
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=NAND

C1510
220PF
10%
16V
X7R-CERM
01005
ROOM=NAND

C1511
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=NAND

C1512
33PF
5%
16V
NP0-C0G-CERM
01005
ROOM=NAND

C1513
8.2PF
+/-0.5PF
16V
NP0-C0G-CERM
01005
ROOM=NAND

C1516
100PF
5%
16V
NP0-C0G
01005
ROOM=NAND

C1514
56PF
5%
16V
NP0-C0G
01005
ROOM=NAND

C1515
1UF
20%
6.3V
X5R
0201
ROOM=NAND

DEFAULT_CAPACITOR_56.000000pF_2_1

C1517
1.0UF
20%
6.3V
X5R
0201-1
ROOM=NAND

C1507
100PF
5%
16V
NP0-C0G
01005
ROOM=NAND

C1508
100PF
5%
16V
NP0-C0G
01005
ROOM=NAND

C1505
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=NAND

C1550
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=NAND

C1551
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=NAND

C1554
1000PF
20%
6.3V
X5R-CERM
01005
ROOM=NAND

PP1V8

C1560
0.01UF
20%
6.3V
X5R
01005
ROOM=NAND

R1560
10K
1%
1/32W
MF
01005
ROOM=NAND
NOSTUFF

C1561
0.01UF
20%
6.3V
X5R
01005
ROOM=NAND

R1561
10K
1%
1/32W
MF
01005
ROOM=NAND
NOSTUFF

NAND_VREF

R1501
3.01K
1%
1/20W
MF
201
ROOM=NAND

U1500

VLGA

VER-1

BOMOPTION=OMIT_TABLE

ROOM=NAND

CRITICAL

PCI_AVDD_CLK1   M4
PCI_AVDD_CLK2   J5
PCI_AVDD_H   J7
PCI_VDD1   K4
PCI_VDD2   K6
AVDD1   C3
VREF   E5
VDD   A3
VDD   A7
VDD   F2
VDD   J1
VDD   J9
VDD   R3
VDD   R7
VDDIO   A5
VDDIO   OB0
VDDIO   OB10
VDDIO   OF0
VDDIO   OF10
VDDIO   R5
VCC   OA0
VCC   OA10
VCC   OD0
VCC   OD10
VCC   OG0
VCC   OG10

CLK_IN   D2

PCIE_REFCLK_P   H8
PCIE_REFCLK_M   H6
PINUSE=BI

PCI_CLKREQ*   G9

PCI_RESREF   M6

PCIE_RX0_P   M8
PCIE_RX0_M   K8
PINUSE=BI

PCIE_RX1_P   N5
PCIE_RX1_M   N3
PINUSE=BI

PCIE_TX0_P   P8
PCIE_TX0_M   N7
PINUSE=BI

PCIE_TX1_P   M2
PCIE_TX1_M   K2
PINUSE=BI

RESET*   F8

TRST*   D8   NC

ZQ   D6

AP TO NAND SYS CLK

PCIE AP TO NAND REFCLK P
PCIE AP TO NAND REFCLK N

PCIE NAND TO AP CLKREQ L

PCIE NAND RESREF

PCIE AP TO NAND TXD0 P
PCIE AP TO NAND TXD0 N

PCIE AP TO NAND TXD1 P
PCIE AP TO NAND TXD1 N

PCIE NAND TO AP RXD0 P
PCIE NAND TO AP RXD0 N

PCIE NAND TO AP RXD1 P
PCIE NAND TO AP RXD1 N

PINUSE=BI

AP TO NAND RESET L

NAND ZQ

R1500
34.8
0.5%
1/32W
MF
01005
ROOM=NAND

NAND_AGND

EXT_D0   G3   PMU TO NAND LOW BATT BOOT L
EXT_D1   J3   AP TO NAND FW STRAP
EXT_D2   H2   NC
EXT_D3   E2   NC
EXT_D4   E6   NC
EXT_D5   F6   NC
EXT_D6   C8   NC
EXT_D7   B8   SYSTEM ALIVE
EXT_NCE   G1   PCIE AP TO NAND RESET L
EXT_NRE   F4   SWD AP BI NAND SWDIO R
EXT_NWE   C5   SWD AP NAND SWCLK R
EXT_RNB   G5   NC
EXT_CLE   H4   NC
EXT_ALE   D4

VSSA   B2
VSS   B4
VSS   B6
VSS   OE10
VSS   G7
VSS   L3
VSS   L5
VSS   L7
VSS   P2
VSS   P4
VSS   P6
VSS   OC0
VSS   OC10
VSS   OE0

PP1520
R1520
0.00
0% MF 01005 1/32W
SWD AP BI NAND SWDIO

R1521
0.00
0% MF 01005 1/32W
SWD AP PERIPHERAL SWCLK

PP1521

ROOM=NAND
P3MM-NSM

PCIE RECEIVE-SIDE PROBE POINTS

PCIE AP TO NAND REFCLK P   PP1500
PCIE AP TO NAND REFCLK N   PP1501
ROOM=NAND
P3MM-NSM

PCIE AP TO NAND TXD0 P   PP1502
PCIE AP TO NAND TXD0 N   PP1503
ROOM=NAND
P3MM-NSM

PCIE AP TO NAND TXD1 P   PP1504
PCIE AP TO NAND TXD1 N   PP1505
ROOM=NAND
P3MM-NSM

ANTIGUA PMU - Buck Supplies

CRITICAL
OMIT_TABLE

U2000
D2255A080UXUVAI2
CSP
SYM 2 OF 5
ROOM=PMU

VCC_MAIN_SNS

PP_VCC_MAIN   33 28 27 26 25 24 22 21 17 11

U2000 pins (left):
- V3 VDD_MAIN_SNS
- R6 / F10 / L13 / L5 / R8 / L4 VDD_MAIN
- A4 / B4 / C4 VDD_BUCK0_01
- A8 / B8 / C8 VDD_BUCK0_23
- A16 / B16 / C16 VDD_BUCK1_01
- A12 / B12 / C12 VDD_BUCK1_23
- J17 / J18 / J19 VDD_BUCK2
- T18 / T19 VDD_BUCK3
- V12 / Y12 / Z12 VDD_BUCK4
- N17 / N18 / N19 VDD_BUCK5
- J1 / J2 VDD_BUCK6
- E1 / E2 VDD_BUCK7
- E17 / E18 / E19 VDD_BUCK8
- U18 / V18 / Y18 / Z18 BUCK3_SW1
- U16 BUCK3_SW2
- U15 BUCK3_SW3
- V16 / Y16 / Z16 BUCK4_SW1

BAT/USB   BUCK INPUT

Input capacitors (VDD_MAIN):
- C2085 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
- C2086 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
- C2087 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
- C2088 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
- C2089 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
- C2090 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
- C2091 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
- C2092 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
- C2093 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
- C2094 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
- C2095 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
- C2096 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
- C2097 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
- C2098 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
- C2099 100PF 20% 16V NP0-COG 01005 ROOM=PMU

PP1V8   29 21 20 17 13 12 9 8 7 6 5

PP1V8_TOUCH   29 28 20   VOLTAGE=1.8V
PP1V8_IMU_OWL   19 12   VOLTAGE=1.8V

PP1V1   11   VOLTAGE=1.1V

BUCK0 — PP_CPU
- L2000 1.0UH-20%-3.6A-0.060OHM PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
- L2001 0.47UH-20%-3.8A-0.048OHM PIQA20121T-SM CRITICAL OMIT_TABLE ROOM=PMU
- L2002 1.0UH-20%-3.6A-0.060OHM PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
- L2003 0.47UH-20%-3.8A-0.048OHM PIQA20121T-SM CRITICAL OMIT_TABLE ROOM=PMU
- A3/B3/C3 BUCK0_LX0
- A5/B5/C5 BUCK0_LX1
- A7/B7/C7 BUCK0_LX2
- A9/B9/C9 BUCK0_LX3
- F8 BUCK0_FB BUCK0_PP_CPU_FB
- PP_CPU VOLTAGE=1.03V 0.625V/0.9V/1.03V   BUCK0 12.5A MAX

C2000 C2001 C2002 C2003 C2004 C2005 (15UF 20% 6.3V X5R 0402-1 ROOM=PMU)
C2006 C2007 C2008 C2009 C2010 (15UF 20% 6.3V X5R 0402-1 ROOM=PMU)

BUCK1 — PP_GPU
- L2010 1.0UH-20%-3.6A-0.060OHM PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
- L2011 0.47UH-20%-3.8A-0.048OHM PIQA20121T-SM CRITICAL OMIT_TABLE ROOM=PMU
- L2012 1.0UH-20%-3.6A-0.060OHM PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
- L2013 0.47UH-20%-3.8A-0.048OHM PIQA20121T-SM CRITICAL OMIT_TABLE ROOM=PMU
- B17/C17 BUCK1_LX0
- A15/B15/C15 BUCK1_LX1
- A13/B13/C13 BUCK1_LX2
- A11/B11/C11 BUCK1_LX3
- F12 BUCK1_FB BUCK1_PP_GPU_FB
- PP_GPU VOLTAGE=0.9V 0.70V/0.80V/0.9V   BUCK1 10.5A MAX

C2012 C2013 C2014 C2015 C2016 (15UF)
C2017 C2018 C2019 C2020 C2021 C2011 (15UF)

BUCK2 — PP_SOC
- L2020 1.0UH-20%-3.6A-0.060OHM PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
- L2021 0.47UH-20%-3.8A-0.048OHM PIQA20121T-SM CRITICAL OMIT_TABLE ROOM=PMU
- H17/H18/H19 BUCK2_LX0
- K17/K18/K19 BUCK2_LX1
- J14 BUCK2_FB BUCK2_PP_SOC_FB
- PP_SOC VOLTAGE=0.825V 0.725V/0.825V   BUCK2 4.7A MAX

C2022 C2023 C2024 C2025 C2026 (15UF)

BUCK3 — PP1V8_SDRAM
- L2030 1.0UH-20%-3.6A-0.060OHM PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
- XW2030 SHORT-10L-0.1MM-SM ROOM=PMU
- R18/R19 BUCK3_LX0
- V19 BUCK3_FB
- U17/V17/Y17/Z17 VBUCK3_SW
- PP1V8_SDRAM VOLTAGE=1.8V   8 12 15 16 24 27 30 31 33   BUCK3 1.5A MAX

C2030 C2031 (15UF 20% 6.3V X5R 0402-1) C2032 100PF NP0-COG 01005

BUCK4 — PP1V1_SDRAM
- L2040 1.0UH-20%-3.6A-0.060OHM PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
- L2041 0.47UH-20%-3.8A-0.048OHM PIQA20121T-SM CRITICAL OMIT_TABLE ROOM=PMU
- XW2040 SHORT-10L-0.1MM-SM ROOM=PMU
- V11/Y11/Z11 BUCK4_LX0
- V13/Y13/Z13 BUCK4_LX1
- T9 BUCK4_FB
- V15/Y15/Z15 VBUCK4_SW
- PP1V1_SDRAM VOLTAGE=1.1V   11 12 16   BUCK4 4.7A MAX

C2040 C2041 C2042 C2043 (15UF 20% 6.3V X5R 0402-1) C2044 100PF NP0-COG 01005

BUCK5 — PP_FIXED   BUCK5 1.1A MAX
- PP_FIXED VOLTAGE=0.85V   11 7 6
- L2050 1.0UH-20%-3.6A-0.060OHM PIQA20161T-SM CRITICAL OMIT_TABLE ROOM=PMU
- XW2050 SHORT-10L-0.1MM-SM ROOM=PMU
- M17/M18/M19 BUCK5_LX0
- M13 BUCK5_FB
- C2050 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
- C2051 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

BUCK6 — PP1V2_CAMERA   BUCK6 400mA MAX
- PP1V2_CAMERA VOLTAGE=1.2V   21 20
- L2060 1UH-20%-1.2A-0.320OHM 0603 CRITICAL
- H1/H2 BUCK6_LX0
- J5 BUCK6_FB
- C2060 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
- C2061 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
- C2062 100PF 16V NP0-COG 01005

BUCK7 — PP_CPU_SRAM   BUCK7 1.1A MAX
- PP_CPU_SRAM VOLTAGE=1.0V 0.80V/0.90V/1.0V   11
- L2070 1.0UH-20%-2.25A-0.15OHM PIXB2016FE-SM CRITICAL ROOM=PMU
- XW2070 SHORT-10L-0.1MM-SM ROOM=PMU
- F1/F2 BUCK7_LX0
- C1 BUCK7_FB
- C2070 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
- C2071 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

BUCK8 — PP_GPU_SRAM   BUCK8 1.1A MAX
- PP_GPU_SRAM VOLTAGE=1.0V 0.80V/0.90V/1.0V   11
- L2080 1.0UH-20%-2.25A-0.15OHM PIXB2016FE-SM CRITICAL ROOM=PMU
- XW2080 SHORT-10L-0.1MM-SM ROOM=PMU
- F17/F18/F19 BUCK8_LX0
- C19 BUCK8_FB
- C2080 15UF 20% 6.3V X5R 0402-1 ROOM=PMU
- C2081 15UF 20% 6.3V X5R 0402-1 ROOM=PMU

ANTIGUA PMU - LDOs

ANTIGUA LDO SPECS

LDO#	ADJ.RANGE	ACCURACY	MAX.CURRENT
LDO1 (A)	2.5-3.3V	+/-1.4%	50mA
LDO2 (B)	1.2-2.0V	+/-2.5%	50mA
LDO3 (A)	2.5-3.3V	+/-1.4%	50mA
LDO4 (D)	0.7-1.2V	+/-2.5%	100mA
LDO5 (F)	2.5-3.3V	+/-2.5%	1000mA
LDO6 (C1)	1.2-3.6V	+/-2.5%	150mA
LDO7 (C)	2.5-3.3V	+/-25mV	250mA
LDO8 (C)	2.5-3.3V	+/-25mV	250mA
LDO9 (C)	2.5-3.3V	+/-25mV	250mA
LDO10 (G)	0.7-1.2V	+/-5.5%	1335mA
LDO11 (C)	2.5-3.3V	+/-25mV	250mA
LDO12 (E)	1.8V	+/-5%	10mA
LDO13 (C)	2.5-3.3V	+/-25mV	250mA
LDO14 (H)	0.8-1.5V	+/-2.5%	250mA
LDO15 (B)	1.2-2.0V	+/-2.5%	50mA

PP VCC MAIN

C2120 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2121 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2122 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU

XW2105 SHORT-10L-0.1MM-SM
VCC_MAIN_SNS
ROOM=PMU
PLACE_NEAR=U2000.U1:2mm

C2123 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2124 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2125 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU

C2126 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU
C2127 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=PMU

CRITICAL
OMIT_TABLE

U2000
D2255A080UXUVAI2
CSP
SYM 1 OF 5
ROOM=PMU

PP1V1_SDRAM
C2130 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2131 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU

M3 VDD_LDO1_3
V2 VDD_LDO2
M2 VDD_LDO4
U1
U2 VDD_LDO5
L2 VDD_LDO6
Y6 VDD_LDO7
Y4 VDD_LDO8
Y3 VDD_LDO9
Y9
Z9 VDD_LDO10
R3 VDD_LDO11
Y5 VDD_LDO13
Y7 VDD_LDO14
N2 VDD_LDO15
K3 VDD_BYPASS

PP1V8_SDRAM
C2132 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU

P12 VPP_OTP

LDO INPUT

LDO

M1 VLDO1
V1 VLDO2
L1 VLDO3
N1 VLDO4
T1
T2 VLDO5
K1 VLDO6
K2 VBYPASS
Z6 VLDO7
Z4 VLDO8
Z3
Y2 VLDO9_FB
Y8
Z8 VLDO10
R2 VLDO11
K6 VLDO12
Z5 VLDO13
Z7 VLDO14
P2 VLDO15

VOLTAGE=3.3V PP3V3 USB LDO1
VOLTAGE=1.8V PP1V8 VA LDO2
PP3V0 TRISTAR LDO3
VOLTAGE=0.8V PP0V8 OWL LDO4
VOLTAGE=3.0V PP3V0 NAND LDO5
VOLTAGE=3.3V PP3V3 ACC LDO6
VOLTAGE=3.0V PP3V0 PROX ALS LDO7
VOLTAGE=2.775V PMU LDO8 .... LDO8
VOLTAGE=2.85V PP2V85 CAM AVDD PMU LDO9
VOLTAGE=0.9V PP0V9 NAND LDO10
VOLTAGE=3.0V PP3V0 PROX IRLED LDO11
VOLTAGE=1.8V PP1V8 ALWAYS LDO12
VOLTAGE=3.0V PP3V0 MESA LDO13
VOLTAGE=1.2V PP1V2 .... LDO14
VOLTAGE=1.8V PP1V8 MESA LDO15

CAM_AVDD_FB XW2100
PLACE_NEAR=U2000.Y2:2mm ROOM=PMU SHORT-10L-0.1MM-SM

U19 VPUMP
PMU_VPUMP
VPUMP:10nF min. @ 4.6V

C2100 47NF 20% 6.3V X5R-CERM 01005 ROOM=PMU
C2101 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2103 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2105 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2107 4.3UF 20% 4V X5R-CERM 0610 ROOM=PMU
C2109 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2111 4.3UF 20% 6.3V X5R-CERM 0610 ROOM=PMU
C2113 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2115 4.3UF 20% 4V X5R-CERM 0610 ROOM=PMU

C2102 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2104 2.2UF 20% 6.3V X5R-CERM 0201
C2106 2.2UF 20% 6.3V X5R-CERM 0201
C2108 NOSTUFF 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2110 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2112 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU
C2114 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=PMU

ROOM=PMU ROOM=PMU

U2000
D2255A080UXUVAI2
CSP
SYM 5 OF 5
CRITICAL
OMIT_TABLE

NC NC

U2000
D2255A080UXUVAI2
CSP
SYM 4 OF 5
ROOM=PMU
CRITICAL
OMIT_TABLE

VSS

PMU_VSS_RTC
NOTE: T3 IS XTAL REF GND

SYNC_MASTER=N/A SYNC_DATE=N/A
PAGE TITLE
SYSTEM POWER:PMU (2/3)
Apple Inc.
DRAWING NUMBER 051-1902 SIZE D
REVISION A.0.0
BRANCH
PAGE 21 OF 49
SHEET 15 OF 59

CONTROL PIN NOTES:

NOTE (1):INPUT PULL-DOWN 100-300k
NOTE (2):INPUT PULL-DOWN 1M
NOTE (3):INPUT PULL-UP OR DOWN 100k-300k
NOTE (4):OUTPUT OPEN-DRAIN, REQUIRES PULL-UP

CRITICAL
OMIT_TABLE
U2000
D2255A080UXUVAI2
CSP
SYM 3 OF 5

PP1V8_SDRAM
33 31 30 27 24 15 14 12 8

R2260
100K
5%
1/32W
MF
01005
ROOM=PMU

R2261
100K
5%
1/32W
MF
01005
ROOM=PMU

PMU TO SYSTEM COLD RESET L

C2260
1000PF
5%
6.3V
X5R-CERM
01005
ROOM=PMU

AP TO PMU WDOG RESET   P7 RESET_IN1 (3)
TRISTAR TO PMU HOST RESET   P8 RESET_IN2 (3)
AP TO PMU SOCHOT1 L   P9 RESET_IN3 (3)
                           K4 RESET*   (4)
OWL TO PMU SHDN   N8 SHDN   (1)

OWL TO PMU SLEEP1 REQUEST   N3 SLEEP1_REQ (1)
PMU TO OWL SLEEP1 READY   N7 SLEEP1_RDY
OWL TO PMU ACTIVE REQUEST   P3 ACTIVE_REQ (1)
PMU TO OWL ACTIVE READY   P4 ACTIVE_RDY
PMU TO OWL CLK32K   T4 SLEEP_32K
PMU TO WLAN CLK32K   R4 OUT_32K

SYSTEM ALIVE   H6 SYS_ALIVE (2)
                          NC L3 TMPR_DET (2)
PMU TO AP IRQ L   L8 IRQ*   (4)
I2C0 AP SCL   R7 SCL
I2C0 AP SDA   T7 SDA

DWI PMGR TO PMU SCLK   U7 SCLK (1)
DWI PMGR TO PMU BACKLIGHT MOSI U8 MOSI (1)
DWI PMU TO PMGR MISO   V7 MISO

AP TO PMU AMUX OUT   F13 AMUX_A0
                          NC G13 AMUX_A1
                          NC J12 AMUX_A2
BUTTON RINGER A   G12 AMUX_A3
BUTTON VOL UP L   H13 AMUX_A4
BUTTON VOL DOWN L   H14 AMUX_A5
LCM TO CHESTNUT PWR EN   K10 AMUX_A6
TRISTAR TO PMU USB BRICK ID K11 AMUX_A7
CHESTNUT TO PMU ADCMUX   K13 AMUX_AY
PMU AMUX AY   J13

BB TO PMU AMUX SMPS1   N11 AMUX_B0
BB TO PMU AMUX SMPS3   M12 AMUX_B1
                         NC L11 AMUX_B2
                         NC M10 AMUX_B3
PMU TO WLAN CLK32K   L14 AMUX_B4
BB TO PMU AMUX LDO11 SIM1 L12 AMUX_B5
AP TO PMU TEST CLKOUT   M11 AMUX_B6
BB TO PMU AMUX SMPS4   L10 AMUX_B7
PMU AMUX BY   K14 AMUX_BY

FOREHEAD NTC   M6 TDEV1
REAR CAMERA NTC   M7 TDEV2
RADIO PA NTC   N4 TDEV3
AP NTC   N5 TDEV4
PMU TCAL   N6 TCAL

PMU XTAL1   P1 XTAL1
PMU XTAL2   R1 XTAL2

PMU VDD RTC   P6 VDD_RTC

RESETS   REFS
COMPARATOR
PMGR   ADC
BUTTONS
AMUX
GPIO
NTC
XTAL

IREF   K5 PMU IREF
VREF   M4 PMU VREF

C2270
0.22UF
20%
6.3V
MF
0201
ROOM=PMU

R2270
200K
1%
1/20W
MF
201
ROOM=PMU

PRE_UVLO M5   PMU TO AP SOCHOT0 L
VDROOP   G5 PMU VDROOP OUT

R2201
0.00   1/32W
MF 0%   01005
ROOM=PMU

VDROOP_DET H5 PMU VDROOP DET IN

R2205
150   1/32W
MF 1%   01005
ROOM=PMU
NO_XNET_CONNECTION=1

AP GPU SENSE P
NOTE:VDROOP_DET R/C Low-pass Fc=1.06MHz

C2205
1000PF
10%
10V
X5R
01005
ROOM=PMU

C2203
1000PF
10%
6.3V
X5R-CERM
01005
ROOM=CHESTNUT
PLACE_NEAR=U2000.R5:6mm

BRICK_ID T5 TRISTAR TO PMU USB BRICK ID
ADC_IN   R5 CHESTNUT TO PMU ADCMUX

BUTTON1   G6 BUTTON MENU KEY L
BUTTON2   F6 BUTTON HOLD KEY L
BUTTON3   E6 BUTTON RINGER A
BUTTON4   F5 NC

BUTTON1 + BUTTON2 ASSERTED FOR
>TBD SECONDS CAUSES TWO-FINGER RESET

GPIO1   F7 TIGRIS TO PMU INT L
GPIO2   G7 BB TO PMU PCIE HOST WAKE L
GPIO3   J7 PMU TO BB PMIC RESET R L
GPIO4   G8 TRISTAR TO AP INT
GPIO5   F8 STOCKHOLM TO PMU HOST WAKE
GPIO6   J8 PMU TO NAND LOW BATT BOOT L
GPIO7   K8 WLAN TO PMU HOST WAKE
GPIO8   F9 CODEC TO PMU MIKEY INT L
GPIO9   G9 PMU TO BT REG ON
GPIO10 H9 BT TO PMU HOST WAKE
GPIO11 J9 PMU TO WLAN REG ON
GPIO12 G10 NC
GPIO13 H10 PMU TO CODEC DIGLDO PULLDN
GPIO14 J10 CODEC TO AP PMU INT L
GPIO15 F11 PMU TO BB USB VBUS DETECT
GPIO16 G11 PMU TO STOCKHOLM EN
GPIO17 H11 NC
GPIO18 K5 NC
GPIO19 J11 PMU TO LCM PANICB
GPIO20 G12 NC
GPIO21 H12 I2C0 AP SCL

R2200
1.00K
5%
1/32W
MF
01005
ROOM=PMU

PMU TO BB PMIC RESET L

FOREHEAD NTC
C2210
100PF
5%
16V
NP0-C0G
01005
ROOM=PMU

R2210
10KOHM-1%
5%
MF
01005
ROOM=PMU

FOREHEAD NTC_RETURN

REAR CAMERA NTC
C2220
100PF
5%
16V
NP0-C0G
01005
ROOM=PMU

R2220
10KOHM-1%
5%
MF
01005
ROOM=PMU

RCAM NTC RETURN

RADIO PA NTC
C2230
100PF
5%
16V
NP0-C0G
01005
ROOM=PMU

R2230
10KOHM-1%
5%
MF
01005
ROOM=PMU

PA NTC RETURN

AP NTC
C2240
100PF
5%
16V
NP0-C0G
01005
ROOM=PMU

R2240
10KOHM-1%
5%
MF
01005
ROOM=PMU

AP NTC RETURN

SHORT-10L-0.1MM-SM TDEV2
ROOM=PMU   XW2210
GPIO13

SHORT-10L-0.1MM-SM
ROOM=PMU   XW2220

SHORT-10L-0.1MM-SM
ROOM=PMU   XW2230

SHORT-10L-0.1MM-SM
ROOM=PMU   XW2240

C2202
0.22UF
20%
6.3V
X5R
0201
ROOM=PMU

CRITICAL
Y2200
32.768KHZ-20PPM-12.5PF
1.60X1.00-SM
ROOM=PMU

C2250
100PF
5%
16V
NP0-C0G
01005
ROOM=PMU

R2250
3.92K
0.1%
1/20W
MF
0201
ROOM=PMU

C2200
18PF
5%
16V
CERM
01005
ROOM=PMU

C2201
18PF
5%
16V
CERM
01005
ROOM=PMU

PMU VSS RTC
VOLTAGE=0.0V

XW2200
SHORT-10L-0.1MM-SM
ROOM=PMU

NOTE:100PF CAPS ARE THE SAMPLING CAPS FOR PMU ADC

SYNC_MASTER=N/A   SYNC_DATE=N/A
PAGE TITLE
SYSTEM POWER:PMU (3/3)
DRAWING NUMBER   SIZE
051-1902   D
REVISION
A.0.0

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TIGRIS CHARGER

APN:343S00033

PP VCC MAIN
VOLTAGE=4.3V
14 15 21 22 24 26 27 28 33

C2330 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=CHARGER
C2331 10UF 20% 6.3V CERM-X5R 0402-9 ROOM=CHARGER
C2332 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CHARGER
C2333 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CHARGER

TIGRIS LDO

C2307 100PF 5% 16V NP0-C0G 01005 ROOM=CHARGER
C2305 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CHARGER

CRITICAL
Q2300
CSD68827W
BGA
ROOM=CHARGER

TIGRIS PMID

C2320 4.2UF 10% 16V X5R-CERM 0402-1 ROOM=CHARGER
C2321 4.2UF 10% 16V X5R-CERM 0402-1 ROOM=CHARGER
C2322 100PF 5% 35V NP0-C0G 01005 ROOM=CHARGER
C2323 100PF 5% 35V NP0-C0G 01005 ROOM=CHARGER

U2300
SN2400AB0
WCSP
ROOM=CHARGER
CRITICAL

OMIT_TABLE
CRITICAL
L2300
1.0UH-20%-3.6A-0.060OHM
PIQA20161T-SM
ROOM=CHARGER

PMID
VBUS
VBUS
VBUS
VBUS
VBUS

LDO
BOOT
BUCK_SW
BUCK_SW
BUCK_SW
BUCK_SW

TIGRIS BOOT

C2300 0.047UF 10% 16V X5R 0201 ROOM=CHARGER

C2301 100PF 5% 16V NP0-C0G 01005 ROOM=CHARGER
C2302 100PF 5% 16V NP0-C0G 01005 ROOM=CHARGER

TIGRIS BUCK LX

PP5V0 USB
31 30 3

PP1V8 ALWAYS
15 13 8

C2310 4.2UF 10% 16V X5R-CERM 0402-1 ROOM=CHARGER
C2311 100PF 5% 35V NP0-C0G 01005 ROOM=CHARGER

R2310 100K 5% 1/32W MF 01005 ROOM=CHARGER

BAT
BAT
BAT
BAT

BAT_SNS

PP BATT VCC
3 18

I2C1 AP SDA
I2C1 AP SCL
SYSTEM ALIVE
TRISTAR TO TIGRIS VBUS OFF
TIGRIS TO PMU INT R L
TIGRIS VBUS DETECT

SDA
SCL
SYS_ALIVE
VBUS_OVP_OFF
INT
VBUS_DET

VBATT SENSE
TIGRIS ACTIVE DIODE
SWI AP BI TIGRIS FET
TIGRIS TO BATTERY SWI

ACT_DIODE
HDQ_HOST
HDQ_GAUGE

R2311 100 1% 1/32W MF 01005 ROOM=CHARGER

TIGRIS TO PMU INT L
16

NOSTUFF
R2300 100K 5% 1/32W MF 01005 ROOM=CHARGER

C2306 100PF 5% 16V NP0-C0G 01005 ROOM=CHARGER
C2303 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CHARGER
C2304 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CHARGER

TEST

USB VBUS DETECT
5

R2320 30.1K 1% 1/32W MF 01005 ROOM=CHARGER

PGND
PGND
PGND
PGND

CRITICAL
Q2301
DMN2990UFA
DFN0806
ROOM=CHARGER

NOSTUFF
R2301 0.00 0% 1/32W MF 01005 ROOM=CHARGER

PP1V8

PP1V8

R2302 40.2K 1% 1/32W MF 01005 ROOM=CHARGER
DEFAULT_RESISTOR_40200OHM_2_1

SWI_AP_BI_TIGRIS

SYNC_MASTER=N/A   SYNC_DATE=N/A
PAGE TITLE
SYSTEM POWER:CHARGER
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BATTERY CONNECTOR

THIS ONE ON MLB --->   516S00104 (RCPT)
516S00105 (PLUG)

PP BATT VCC
VOLTAGE=4.3V

CRITICAL
ROOM=BATTERY_B2B

J2400
RCPT-BATT-2BLADES
F-ST-SM

C2410
56PF
5%
16V
NP0-C0G
01005
ROOM=BATTERY_B2B

C2411
100PF
5%
16V
NP0-C0G
01005
ROOM=BATTERY_B2B

C2412
220PF
5%
16V
X7R-CERM
01005
ROOM=BATTERY_B2B

R2400
100
5%
1/32W
MF
01005
ROOM=BATTERY_B2B

TIGRIS TO BATTERY SWI

TIGRIS BATTERY SWI CONN

C2400
56PF
5%
16V
NP0-C0G
01005
ROOM=BATTERY_B2B

XW2400
SHORT-10L-0.25MM-SM
ROOM=BATTERY_B2B
PLACE_NEAR=J2400.1:3mm

VBATT SENSE

SYNC_MASTER=N/A   SYNC_DATE=N/A

PAGE TITLE
SYSTEM POWER:BATTERY CONN

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CARBON - ACCEL & GYRO

INVENSENSE (APN: 338S00017, 338S00087)

PP1V8_IMU_OWL 12 14 19

C3010 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=CARBON

C3012 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=CARBON

U3010
MPU-6700-12-COMBO
LGA

VDD VDDIO

SPI OWL TO ACCEL GYRO CS L — 5 CS
GYRO CHARGE PUMP — 14 REGOUT/GND_CAP
8 FSYNC/GND
SCL/SPC 2 SPI OWL TO IMU SCLK INT 9 19
SDA/SDI 3 SPI OWL TO IMU MOSI INT 9 19
SA0/SDO 4 SPI IMU TO OWL MISO INT 9 19

C3013 0.1UF 10% 6.3V X6S 0201 ROOM=CARBON

ACCEL GYRO TO OWL INT2 — 7 INT/INT2
DRDY/INT1 6 ACCEL GYRO TO OWL INT1 OUT 9

OMIT_TABLE
ROOM=CARBON
CRITICAL

GND1 GND2 GND3 GND4 GND5 GND6
9 10 11 12 13 15

MAGNESIUM - COMPASS

ALPS (APN:338S00084)

PP1V8 IMU OWL 12 14 19

NOSTUFF C3002 100PF 5% 16V NP0-C0G 01005 ROOM=MAGNESIUM

C3001 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=MAGNESIUM

C3000 2.2UF 20% 6.3V X5R-CERM 0201 ROOM=MAGNESIUM

VDD
U3000
HSCDTD601A-19
LGA

NC C2 VPP
33 31 30 27 19 PP3V0_TRISTAR — B1 RSV
NC B3 RSV
D1 RSV
D2 RSV
D4 RST* 2.09M INT P0

SDO B4 SPI IMU TO OWL MISO OUT 9 19
SDA/SDI A4 SPI OWL TO IMU MOSI INT 9 19
SCL/SCK A3 SPI OWL TO IMU SCLK INT 9 19
CSB A2 SPI OWL TO COMPASS CS L 9
TRG/SE C3 NC 114K INT P0
DRDY A1 COMPASS TO OWL INT OUT 9 19

C3008 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=MAGNESIUM

19 14 13 PP1V8 IMU OWL

114K INT P0

ROOM=MAGNESIUM
CRITICAL
VSS

NOSTUFF C3003 56PF 5% 16V NP0-C0G 01005 ROOM=MAGNESIUM

NOSTUFF C3004 56PF 5% 16V NP0-C0G 01005 ROOM=MAGNESIUM

NOSTUFF C3005 56PF 5% 16V NP0-C0G 01005 ROOM=MAGNESIUM

NOSTUFF C3006 56PF 5% 16V NP0-C0G 01005 ROOM=MAGNESIUM

NOSTUFF C3007 100PF 5% 16V NP0-C0G 01005 ROOM=MAGNESIUM

*NOTE: B1, D1, D2 connections are for AKM backup only.

DISCRETE ACCEL

BOSCH (APN: 338S1163)

19 14 13 PP1V8 IMU OWL

C3031 2.2UF 20% 6.3V X5R-CERM 0201 OMIT_TABLE

C3032 0.1UF 20% 6.3V X5R-CERM 01005 OMIT_TABLE

VDD VDDIO
U3030
BMA282
LGA

SPI OWL TO DISCRETE ACCEL CS L — 4 CS*
SCX 1 SPI OWL TO IMU SCLK 9 19
SDX 2 SPI OWL TO IMU MOSI 9 19
OMIT_TABLE SDO 3 SPI IMU TO OWL MISO R

R3032 20.0 5% 1/32W MF 01005 OMIT_TABLE
SPI IMU TO OWL MISO 9 19

CRITICAL

R3030 20.0 5% 1/32W MF 01005 OMIT_TABLE
DISCRETE ACCEL TO OWL INT1 — DISCRETE ACCEL TO OWL INT1 R 6 INT1
DISCRETE ACCEL TO OWL INT2 R 5 INT2
PS 13

R3031 20.0 5% 1/32W MF 01005 OMIT_TABLE
DISCRETE ACCEL TO OWL INT2 —

GND GNDIO
9 11 12 14 10

PHOSPHOROUS

BOSCH (APN:338S00044)

PP1V8 IMU OWL 12 14 19

C3020 0.1UF 20% 6.3V X5R-CERM 01005 ROOM=PHOSPHORUS

C3021 1.0UF 20% 6.3V X5R-CERM 0201-1 ROOM=PHOSPHORUS

CRITICAL
ROOM=PHOSPHORUS

VDD VDDIO
U3020
BMP282BC
SDI LGA SDO

19 9 IN SPI OWL TO IMU MOSI — 3 SDI
19 9 IN SPI OWL TO IMU SCLK — 4 SCK
9 IN SPI OWL TO PHOSPHOROUS CS L — 2 CS* 70K INT PU
SDO 5 SPI IMU TO OWL MISO OUT 9 19

GND

NOSTUFF C3022 56PF 5% 16V NP0-C0G 01005 ROOM=PHOSPHORUS

NOSTUFF C3023 56PF 5% 16V NP0-C0G 01005 ROOM=PHOSPHORUS

NOSTUFF C3024 56PF 5% 16V NP0-C0G 01005 ROOM=PHOSPHORUS

NOSTUFF C3025 56PF 5% 16V NP0-C0G 01005 ROOM=PHOSPHORUS

PHOSPHORUS TO OWL IRQ R

R3020 0.00 5% 1/32W MF 01005 ROOM=PHOSPHORUS
PHOSPHORUS TO OWL IRQ 9

R3020 SHOULD BE STUFFED FOR ST PHOSPHORUS ONLY.
FOR BOSCH PHOSPHORUS, PINS 1 AND 7 ARE SHORTED INTERNALLY,
SO NO NEED FOR 0-OHM TO GROUND OPTION ON PIN 7.

FOREHEAD FLEX (FCAM)

PROX & ALS POWER

20 15 PP3V0 PROX IRLED

C3120	C3121	C3122	C3123	C3124
100PF	0.1UF	2.2UF	2.2UF	2.2UF

FOREHEAD CONNECTOR

THIS ONE ON MLB ---> 516S00048 (RCPT)
516S00049 (PLUG)

J3100
AA20L-S036VA1
F-ST-SM

CAMERA POWER

FL3100
FERR-22-OHM-1A-0.055OHM

29 21 17 14 13 9 8 7 1 3   PP1V8 → PP1V8 FCAM CONN   VOLTAGE=1.8V

C3101	C3100
0.1UF	100PF

FL3102
FERR-22-OHM-1A-0.055OHM

21 14 PP1V2 CAMERA → PP1V2 FCAM VCORE CONN VOLTAGE=1.2V

C3103	C3102
0.1UF	100PF

FL3104
FERR-22-OHM-1A-0.055OHM

15 PP2V85 CAM AVDD PMU → PP2V85 FCAM AVDD CONN VOLTAGE=2.85V

C3106	C3105	C3104
2.2UF	0.1UF	100PF

FL3125
120-OHM-210MA

15 PP3V0 PROX ALS → PP3V0 PROX CONN VOLTAGE=3.0V

C3125 100PF

FL3126
120-OHM-210MA

PP3V0 ALS CONN VOLTAGE=3.0V

C3130	C3129	C3128	C3127	C3126
2.2UF	2.2UF	2.2UF	0.1UF	100PF

CAMERA I/O

FL3110
120-OHM-210MA

AP TO FCAM CLK → AP TO FCAM CLK CONN   C3110 100PF

FL3111
120-OHM-210MA

AP TO FCAM SHUTDOWN L → AP TO FCAM SHUTDOWN CONN L   C3111 100PF

I2C ISP TO FCAM SCL   C3112 56PF

I2C ISP BI FCAM SDA   C3113 56PF

PROX & ALS INTERFACE

DOPPLER_PROX
R3142 0.00

29 28 I2C TOUCH TO MAMBA PROX SCL → PGND IRLED K

C3140 56PF

CRITICAL
ANALOG_PROX
Q3140
DMN3730UFB4
DFN1006H4-3
SYM_VER_1

29 TOUCH TO PROX TX EN BUFF

R3140 1.00M

PP1V8 TOUCH
R3141 100K

NOTE:INTERRUPT FOR DOPPLER PROX
TOUCH TO PROX RX EN FCAM CONN

1 0.00 2

DOPPLER_PROX
R3144

29 28 I2C TOUCH BI MAMBA PROX SDA

ANALOG_PROX
R3143 0.00

29 PROX TO TOUCH RX LCM CONN → PROX TO TOUCH RX FCAM CONN   C3143 56PF

29 I2C2 AP SDA → I2C2 AP BI ALS SDA CONN   C3144 56PF
MAKE_BASE=TRUE

29 8 I2C2 AP SCL → I2C2 AP TO ALS SCL CONN   C3145 56PF
MAKE_BASE=TRUE

8 ALS TO AP INT L → ALS TO AP INT CONN L
FL3146 120-OHM-210MA   C3146 100PF

CAMERA MIPI

CRITICAL L3100
65-OHM-0.1A-0.7-2GHZ
TAM0605

7 MIPI FCAM TO AP DATA0 P → MIPI FCAM TO AP DATA0 CONN P
MIPI FCAM TO AP DATA0 N → MIPI FCAM TO AP DATA0 CONN N

CRITICAL L3101
65-OHM-0.1A-0.7-2GHZ
TAM0605

MIPI FCAM TO AP DATA1 P → MIPI FCAM TO AP DATA1 CONN P
MIPI FCAM TO AP DATA1 N → MIPI FCAM TO AP DATA1 CONN N

CRITICAL L3102
65-OHM-0.1A-0.7-2GHZ
TAM0605

MIPI FCAM TO AP CLK P → MIPI FCAM TO AP CLK CONN P
MIPI FCAM TO AP CLK N → MIPI FCAM TO AP CLK CONN N

Forehead Connector pinout

1 CODEC TO RCVR CONN N	2 CODEC TO HAC CONN P
3 CODEC TO HAC CONN P	4
5 PP1V8 FCAM CONN	6 PP1V2 FCAM VCORE CONN
7 PP2V85 FCAM AVDD CONN	8
9	10 MIPI FCAM TO AP DATA0 CONN N
11	12 MIPI FCAM TO AP DATA0 CONN P
13 AP TO FCAM CLK CONN	14 MIPI FCAM TO AP CLK CONN P
15 I2C ISP TO FCAM SCL	16 MIPI FCAM TO AP CLK CONN N
17 AP TO FCAM SHUTDOWN CONN L	18 MIPI FCAM TO AP DATA1 CONN P
19 I2C ISP BI FCAM SDA	20 MIPI FCAM TO AP DATA1 CONN N
21	22
23 PP3V0 PROX CONN	24
25 TOUCH TO PROX RX EN FCAM CONN	26 PROX TO TOUCH RX FCAM CONN
27 PP3V0 ALS CONN	28
29 I2C2 AP BI ALS SDA CONN	30 I2C2 AP TO ALS SCL CONN
31 ALS TO AP INT CONN L	32 PP3V0 PROX IRLED
33 PGND IRLED K	34 PP CODEC TO FRONTMIC3 BIAS CONN
35 FRONTMIC3 TO CODEC AIN4 CONN N	36 FRONTMIC3 TO CODEC AIN4 CONN P

CRITICAL

FL3150
120-OHM-210MA

24 PP CODEC TO FRONTMIC3 BIAS → PP CODEC TO FRONTMIC3 BIAS CONN VOLTAGE=2.86V
DZ3150 6.8V-100PF

FL3151
70-OHM-25%-0.28A

CODEC TO HAC N → CODEC TO HAC CONN N NO_XNET_CONNECTION=1
DZ3151 12V-33PF

FL3152
70-OHM-25%-0.28A

CODEC TO HAC P → CODEC TO HAC CONN P NO_XNET_CONNECTION=1
DZ3152 12V-33PF

FL3153
70-OHM-25%-0.28A

CODEC TO RCVR N → CODEC TO RCVR CONN N NO_XNET_CONNECTION=1
DZ3153 12V-33PF

FL3154
70-OHM-25%-0.28A

CODEC TO RCVR P → CODEC TO RCVR CONN P NO_XNET_CONNECTION=1
DZ3154 12V-33PF

FL3155
120-OHM-210MA

FRONTMIC3 TO CODEC AIN4 N → FRONTMIC3 TO CODEC AIN4 CONN N NO_XNET_CONNECTION=1
DZ3155 6.8V-100PF

FL3156
120-OHM-210MA

FRONTMIC3 TO CODEC AIN4 P → FRONTMIC3 TO CODEC AIN4 CONN P NO_XNET_CONNECTION=1
DZ3156 6.8V-100PF

REAR CAMERA FLEX

RCAM CONNECTOR

CRITICAL
ROOM=RCAM_B2B
J3200
AA26-S034VA1
F-ST-SM
36   35
38   37

PP1V2 RCAM DIGITAL CONN   PP1V2 RCAM DIGITAL CONN
MIPI RCAM TO AP DATA3 CONN N
MIPI RCAM TO AP DATA3 CONN P
PP1V8 RCAM CONN
MIPI RCAM TO AP DATA1 CONN N
MIPI RCAM TO AP DATA1 CONN P
PP2V85 RCAM AVDD CONN
MIPI RCAM TO AP CLK CONN N
MIPI RCAM TO AP CLK CONN P
I2C ISP BI RCAM SDA
I2C ISP TO RCAM SCL
MIPI RCAM TO AP DATA0 CONN N
MIPI RCAM TO AP DATA0 CONN P
AP TO RCAM CLK CONN
AP TO RCAM SHUTDOWN CONN L
RCAM TO LED DRIVER STROBE EN CONN
MIPI RCAM TO AP DATA2 CONN N
MIPI RCAM TO AP DATA2 CONN P

CAMERA POWER

NOTE: OUTPUT IMPDEANCE MUST BE >0.01-OHM
IN ORDER TO MEET CAP ESR REQUIREMENT PER LDO SPEC.

FL3202
70-OHM-25%-0.28A
PP VCC MAIN
1   2
01005
ROOM=RCAM_B2B

PP VCC MAIN LDO
VOLTAGE=4.3V

U3200
LP5907SNX-2.85
X2SON
4 VIN   VOUT 1
3 EN
GND EPAD

PP2V85 RCAM AVDD LDO
VOLTAGE=2.85V

FL3200
10-OHM-1.1A
1   2
01005
ROOM=RCAM_B2B

PP2V85_RCAM_AVDD_CONN
VOLTAGE=2.85V

C3210
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=RCAM_B2B

C3211
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=RCAM_B2B

C3200
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=RCAM_B2B

C3201
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=RCAM_B2B

C3202
100PF
5%
16V
NP0-C0G
01005
ROOM=RCAM_B2B

CAM EXT LDO EN

FL3201
FERR-22-OHM-1A-0.055OHM
PP1V2 CAMERA
1   2
0201
ROOM=RCAM_B2B

PP1V2 RCAM DIGITAL CONN
VOLTAGE=1.2V

R3203
0.00
0%
1/32W
NP
01005
ROOM=RCAM_B2B

C3203
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=RCAM_B2B

C3204
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=RCAM_B2B

C3206
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=RCAM_B2B

C3205
100PF
5%
16V
NP0-C0G
01005
ROOM=RCAM_B2B

BUCK6_FB

FL3220
FERR-22-OHM-1A-0.055OHM
PP1V8
1   2
0201
ROOM=RCAM_B2B

PP1V8 RCAM CONN
VOLTAGE=1.8V

C3220
1.0UF
20%
6.3V
X5R
0201-1
ROOM=RCAM_B2B

C3221
100PF
5%
16V
NP0-C0G
01005
ROOM=RCAM_B2B

DIGITAL I/O

FL3230
120-OHM-210MA
AP TO RCAM CLK
1   2
01005
ROOM=RCAM_B2B

AP TO RCAM CLK CONN

C3230
100PF
5%
16V
NP0-C0G
01005
ROOM=RCAM_B2B

NOSTUFF
C3299
100PF
5%
16V
NP0-C0G
01005
ROOM=RCAM_B2B

FL3231
120-OHM-210MA
AP TO RCAM SHUTDOWN L
1   2
01005
ROOM=RCAM_B2B

AP TO RCAM SHUTDOWN CONN L

C3231
100PF
5%
16V
NP0-C0G
01005
ROOM=RCAM_B2B

FL3232
120-OHM-210MA
RCAM TO LED DRIVER STROBE EN
1   2
01005
ROOM=RCAM_B2B

RCAM TO LED DRIVER STROBE EN CONN

C3232
100PF
5%
16V
NP0-C0G
01005
ROOM=RCAM_B2B

I2C ISP BI RCAM SDA

C3233
56PF
5%
16V
NP0-C0G
01005
ROOM=RCAM_B2B

I2C ISP TO RCAM SCL

C3234
56PF
5%
16V
NP0-C0G
01005
ROOM=RCAM_B2B

SYNC_MASTER=N/A   SYNC_DATE=N/A

PAGE TITLE
CAMERA:REAR CAMERA B2B

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DUAL LED STROBE DRIVER

APN:353S3899

PP VCC MAIN
33 28 27 26 25 24 21 17 15 14

C3386
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=STROBE

C3387
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=STROBE

OMIT_TABLE
CRITICAL
L3300
1.0UH-20%-3.6A-0.060OHM
PIQA20161T-SM
ROOM=STROBE

PP LED DRIVER SW
VOLTAGE=5.0V

PP LED BOOST OUT
VOLTAGE=5.0V

C3394
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=STROBE

C3396
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=STROBE

U3300
LM3564A1TMX
WLCSP
ROOM=STROBE
CRITICAL

IN   D1
SW   A2
      B2

A3
B3   OUT
C3

A4
B4   LED1

C4
D4   LED2

ENABLE   D3   INT_252K_PD
STROBE   E3   INT_250K_PD
TORCH   C2   INT_250K_PD   NC
TX   E4   INT_250K_PD
SDA   E2
SCL   D2

TEMP   E1

GND   AGND
A1   B1   C1

AP TO LED DRIVER EN   8
RCAM TO LED DRIVER STROBE EN   21

BB TO LED DRIVER GSM BURST IND   33 27
I2C ISP BI RCAM SDA   21
I2C ISP TO RCAM SCL   21 7

PP LED DRIVER COOL LED
VOLTAGE=5.0V

PP LED DRIVER WARM LED
VOLTAGE=5.0V

C3308
100PF
5%
16V
NPO-C0G
01005
ROOM=STROBE

C3373
100PF
5%
16V
NPO-C0G
01005
ROOM=STROBE

LED MODULE NTC

CALTRA AUDIO CODEC (ANALOG INPUTS & OUTPUTS)

U3500
WLCSP-1
SYM 1 OF 3
CS42L71
ROOM=CODEC
CRITICAL

Signal	Pin	Port
VOICE MIC		
LOWERMIC1 TO CODEC AIN1 P	L2	AIN1+
LOWERMIC1 TO CODEC AIN1 N	L1	AIN1-
LOWER MIC		
LOWERMIC4 TO CODEC AIN2 P	K3	AIN2+
LOWERMIC4 TO CODEC AIN2 N	L3	AIN2-
ANC REF MIC		
REARMIC2 TO CODEC AIN3 P	K2	AIN3+
REARMIC2 TO CODEC AIN3 N	K1	AIN3-
ANC ERROR MIC		
FRONTMIC3 TO CODEC AIN4 P	J3	AIN4+
FRONTMIC3 TO CODEC AIN4 N	J4	AIN4-

Right side outputs:

- AOUT1+ L9 CODEC TO RCVR P
- AOUT1- M9 CODEC TO RCVR N
- AOUT2+ L8 CODEC TO HAC P
- AOUT2- M8 CODEC TO HAC N
- HPOUTA K10 CODEC TO HPHONE L
- HPOUTB K11 CODEC TO HPHONE R
- HS3 M5 CODEC TO HPHONE HS3
- HS4 M4 CODEC TO HPHONE HS4
- HS3_REF L10 CODEC TO HPHONE HS3 REF
- HS4_REF M10 CODEC TO HPHONE HS4 REF

- HSIN+ D1 CODEC HSIN P
- HSIN- E1 CODEC HSIN N
- HPDETECT J9 HPHONE TO CODEC DETECT

Left NC pins:
- NC F1 AIN5+
- NC G1 AIN5-
- NC F2 AIN6+
- NC F3 AIN6-
- NC G2 AIN7+
- NC G3 AIN7-
- NC A4 DMIC1_CLK
- NC B4 DMIC1_DATA
- NC C4 DMIC2_CLK
- NC C3 DMIC2_DATA
- NC A3 DMIC3_CLK
- NC B3 DMIC3_DATA
- NC A2 DMIC4_CLK
- NC B2 DMIC4_DATA
- NC A9 PDM_CLK
- NC B9 PDM_DATA

- DP J12 MIKEYBUS CALTRA DATA P
- DN H12 MIKEYBUS CALTRA DATA N
- MBUS_REF G10

C3505 0.1UF 20% 6.3V X5R-CERM 01005
C3504 220PF 10% 10V X7R-CERM ROOM=CODEC
C3506 0.1UF 20% 6.3V X5R-CERM ROOM=CODEC
CODEC_HSIN_R_P
CODEC_HSIN_R_N

R3515 1.33K 1% 1/32W MF 01005 NO_XNET_CONNECTION=1 ROOM=CODEC
R3550 1.33K 1% 1/32W MF 01005 NO_XNET_CONNECTION=1 ROOM=CODEC

NOSTUFF **C3550** 56PF 5% 16V NP0-C0G 01005 ROOM=CODEC
NOSTUFF **C3551** 56PF 5% 16V NP0-C0G 01005 ROOM=CODEC

C3552 100PF 5% 16V NP0-C0G 01005
R3502 20.0 5% 1/32W MF 01005 ROOM=CODEC
R3503 20.0 5% 1/32W MF 01005 ROOM=CODEC
C3554 100PF 5% 16V NP0-C0G 01005 ROOM=CODEC

MIKEYBUS DATA P
MIKEYBUS DATA N

CALTRA AUDIO CODEC (POWER & I/O)

PP1V8 VA

C3640
2.2UF
20%
3V
X5R-CERM
0201
PLACE_NEAR=U3500.J2:2mm
CODEC AGND

PP VCC MAIN

C3600
10UF
20%
3V
CERM-X5R
0402-9
ROOM=CODEC

C3601
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=CODEC

C3602
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=CODEC

C3603
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=CODEC

PP1V8 SDRAM

C3610
10UF
20%
3V
CERM-X5R
0402-9
ROOM=CODEC

C3611
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=CODEC

C3612
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=CODEC

PP1V2 VD_FILT
VOLTAGE=1.2V

C3670
1.0UF
20%
6.3V
X5R
0201-1
ROOM=CODEC

PP1V8 SDRAM

R3650
1.00K
5%
1/32W
MF
01005

CODEC RESET L   H3 RESET*

U3500
WLCSP-1
CS42L71
SYM 3 OF 3
ROOM=CODEC
CRITICAL

JTAG_TMS D3 NC
JTAG_TCK D4 NC
JTAG_TDI D2 NC
JTAG_TDO C4 NC

CODEC TO PMU MIKEY INT L   K8 WAKE*
CODEC TO AP PMU INT L   K9 INT*

SPI AP TO CODEC CS L   C9 CS*
SPI AP TO CODEC SCLK   C8 CCLK

SPI AP TO CODEC MOSI   B8 MOSI
SPI CODEC TO AP MISO   A8 MISO

I2S AP TO CODEC MCLK   C12 MCLK

I2S AP TO CODEC ASP BCLK   C6 ASP_SCLK
I2S AP TO CODEC ASP LRCLK   C5 ASP_LRCK/FSYNC
I2S AP TO CODEC ASP DOUT   B5 ASP_SDIN
I2S CODEC TO AP ASP DIN   B6 ASP_SDOUT

I2S AP OWL TO CODEC XSP BCLK   B11 XSP_SCLK
I2S AP OWL TO CODEC XSP LRCLK C11 XSP_LRCK/FSYNC
I2S AP TO CODEC XSP DOUT   A11 XSP_SDIN/DAC2B_MUTE
I2S CODEC TO AP OWL XSP DIN   A10 XSP_SDOUT4

I2S AP TO CODEC MSP BCLK   B7 MSP_SCLK
I2S AP TO CODEC MSP LRCLK   C7 MSP_LRCK/FSYNC
I2S AP TO CODEC MSP DOUT   D8 MSP_SDIN
I2S CODEC TO AP MSP DIN   A7 MSP_SDOUT

PMU TO CODEC DIGLDO PULLDN H5 DIGLDO_PULLDN
                            J5 DIGLDO_PDN

TSTO D11 NC
TSTO B10 NC
TSTO D5 NC
TSTO D6 NC
TSTO E5 NC
TSTO E6 NC
TSTO E7 NC
TSTO K4 NC

TSTI C10
TSTI D10
TSTI D7
TSTI D9
TSTI E8
TSTI E9
TSTI G11
TSTI H4
TSTI M1

U3500
WLCSP-1
SYM 2 OF 3
CS42L71
ROOM=CODEC
CRITICAL

VCP VD VD C1 VD_FILT E12 VL A5 VP K7 VA H11 VP_MBUS
J11 D12 G12   VD_FILT   H1   VPROG_CP   J1   H10

C3650
4.7UF
VOLTAGE=2.86V
PP CODEC TO LOWERMIC1 BIAS   M6 MIC1_BIAS
LOWERMIC1 BIAS FILT IN   K7 MIC1_BIAS_FILT

LOWERMIC1 BIAS FILT RET
20%
6.3V
X5R-CERM1
402
ROOM=CODEC

C3651
4.7UF
VOLTAGE=2.86V
PP CODEC TO LOWERMIC4 BIAS   L6 MIC2_BIAS
LOWERMIC4 BIAS FILT IN   J7 MIC2_BIAS_FILT

LOWERMIC4 BIAS FILT RET
20%
6.3V
X5R-CERM1
402
ROOM=CODEC

C3652
4.7UF
VOLTAGE=2.86V
PP CODEC TO REARMIC2 BIAS   K6 MIC3_BIAS
REARMIC2 BIAS FILT IN   L5 MIC3_BIAS_FILT

XW3620
SHORT-10L-0.1MM-SM
REARMIC2 BIAS FILT RET
ROOM=CODEC
PLACE_NEAR=J4700.1:2mm
20%
6.3V
X5R-CERM1
402
ROOM=CODEC

C3653
4.7UF
VOLTAGE=2.86V
PP CODEC TO FRONTMIC3 BIAS   J6 MIC4_BIAS
FRONTMIC3 BIAS FILT IN   K5 MIC4_BIAS_FILT

XW3630
SHORT-10L-0.1MM-SM
FRONTMIC3 BIAS FILT RET
ROOM=CODEC
PLACE_NEAR=J3100.40:2mm
20%
6.3V
X5R-CERM1
402
ROOM=CODEC

FLYP K12 CALTRA FLYP

C3660
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=CODEC

FLYC L12 CALTRA FLYC

C3661
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=CODEC

FLYN M12 CALTRA FLYN

+VCP_FILT J10 CALTRA VCP FILTP

C3662
4.7UF
20%
6.3V
X5R-CERM1
402
ROOM=CODEC

XW3660
SM
ROOM=CODEC

GNDCP L11 CALTRA GNDCP

4.7UF
20%
6.3V
X5R-CERM1
402
ROOM=CODEC

-VCP_FILT M11 CALTRA VCP FILTN

LP_FILT* F12 CALTRA LP FILTP

C3665
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=CODEC

CALTRA HS BIAS FILT   M3 HS_BIAS_FILT
                      M2 HS_BIAS_FILT_REF

C3654
4.7UF
20%
6.3V
X5R-CERM1
402

CALTRA HS BIAS FILT IN

FILT+ H1 CALTRA FILTP

C3664
10UF
20%
3V
CERM-X5R
0402-9
ROOM=CODEC

FILT- H2

C3663

GNDD GNDD GNDD GNDD GNDHS GNDP GNDA
A6   B1   E11   F11   L4   L7   J2

XW3600
SHORT-10L-0.1MM-SM
ROOM=CODEC

CODEC AGND
VOLTAGE=0

GND A1
GND A12
GND B12
GND E2
GND E4
GND E10
GND F4
GND F5
GND F6
GND F7
GND F8
GND F9
GND F10
GND G4
GND G5
GND G6
GND G7
GND G8
GND G9
GND H6
GND H7
GND H8
GND H9
GND J8

SPEAKER AMPLIFIER

APN: 338S1285

PP VCC MAIN   33 28 27 26 24 22 21 17 15 14

PP1V8 VA   15 24 26

C3795
10UF
20%
6.3V
CERM-X5R
0402-8
ROOM=SPKR_AMP

C3732
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=SPKR_AMP

C3735
10UF
10%
6.3V
CERM-X5R
0402-9
ROOM=SPKR_AMP

C3737
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SPKR_AMP

C3709
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=SPKR_AMP

C3730
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SPKR_AMP

PP SPKR VBOOST
VOLTAGE=8.0V

C3741
10UF
20%
X5R-CERM
0402-8
ROOM=SPKR_AMP

C3742
10UF
20%
X5R-CERM
0402-8
ROOM=SPKR_AMP

C3743
10UF
20%
X5R-CERM
0402-8
ROOM=SPKR_AMP

C3744
0.1UF
10%
X5R-CERM
0201
ROOM=SPKR_AMP

C3745
0.1UF
10%
X5R-CERM
0201
ROOM=SPKR_AMP

C3746
100PF
5%
16V
NP0-C0G
01005
ROOM=SPKR_AMP

C3729
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=SPKR_AMP

C3740
4.7UF
20%
6.3V
X5R-CERM
0402
ROOM=SPKR_AMP

A1 B1 C1 D1 A4 A5 F5
VBST   VP VA

**CRITICAL
L3700**
1.2UH-20%-3.0A-0.080OHM

PIQA2016IT-SM
ROOM=SPKR_AMP

PP SPEAKERAMP SW   A2
VOLTAGE=8.0V   B2   SW

U3700
CS35L21-XWZR
WLCSP
VER1
ROOM=SPKR_AMP
CRITICAL

FILT+ F2   SPEAKERAMP FILT
LDO_FILT C5   SPEAKERAMP LDO FILT

33 30 26 17 8   I2C1 AP SDA   D5   SDA
33 30 26 17 8   I2C1 AP SCL   D6   SCL

VSENSE- E3   SPEAKER TO SPEAKERAMP VSENSE N   31
VSENSE+ E2   SPEAKER TO SPEAKERAMP VSENSE P   31

8   SPEAKERAMP TO AP INT L   A7   INT*
A6   RESET*

ISENSE- F1   SPEAKERAMP ISENSE N
ISENSE+ E1   SPEAKERAMP ISENSE P

8   AP TO SPEAKERAMP RESET L

R3729
100K
5%
1/32W
MF
01005
ROOM=SPKR_AMP

8   AP TO SPEAKERAMP STAYIN ALIVE   D7   ALIVE

OUT+ D2   SPEAKERAMP OUT POS
OUT- C2

C7   ADO
1M INT PD

8   I2S AP TO SPEAKERAMP MCLK   E7   MCLK
1M INT PD

8   I2S AP TO CODEC ASP BCLK   E6   SCLK
1M INT PD

IREF+ B7   SPEAKERAMP IREF

26 24 8   I2S AP TO CODEC ASP LRCLK   F6   LRCK/FSYNC
1M INT PD

26 24 8   I2S AP TO CODEC ASP DOUT   F7   SDIN
1M INT PD

26 24 8   I2S CODEC TO AP ASP DIN   E5   SDOUT
1M INT PD

GNDP   GNDA

C3704
220PF
5%
C0G-CERM
01005
10V
ROOM=SPKR_AMP

C3701
0.1UF
1   2
20%
6.3V
X5R-CERM
01005
ROOM=SPKR_AMP

C3705
220PF
5%
C0G-CERM
01005
10V
ROOM=SPKR_AMP

R3702
39.2
1%
1/32W
MF
01005
ROOM=SPKR_AMP

R3701
39.2
1%
1/32W
MF
01005
ROOM=SPKR_AMP

SPEAKERAMP_ISENSE_R_P

SPEAKERAMP_ISENSE_R_N

R3735
44.2K
1%
1/32W
MF
01005
ROOM=SPKR_AMP

XW3702
SHORT-10L-0.1MM-SM
ROOM=SPKR_AMP
PLACE_NEAR=R3703.1±2mm

XW3701
SHORT-10L-0.1MM-SM
ROOM=SPKR_AMP
PLACE_NEAR=R3703.2±2mm

A3 B3 B4 C3 C4 D3 D4 B5 B6 C6 C5 E4 E3 F3 F4

SPEAKERAMP TO SPEAKER OUT POS   31

R3703
0.100
1%
1/4W
MF
0402
ROOM=SPKR_AMP

SPEAKERAMP TO SPEAKER OUT NEG   31

C3760
220PF
1%
10V
X7R-CERM
01005
ROOM=SPKR_AMP

C3763
220PF
1%
10V
X7R-CERM
01005
ROOM=SPKR_AMP

C3700
1000PF
1%
10V
X5R
01005
ROOM=SPKR_AMP

C3702
1000PF
1%
10V
X5R
01005
ROOM=SPKR_AMP

ARC DRIVER

APN: 338S1285

PP VCC MAIN

33 28 27 25 24 22 21 17 15 14

C3895
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=ARC

C3832
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=ARC

C3835
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=ARC

C3837
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=ARC

C3809
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=ARC

C3830
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=ARC

PP1V8 VA
15 24 25 26

R3811
0.00
0%
1/32W
MF
01005
SOLENOID_TO_ARC_DRIVER_VSENSE_N

R3810
0.00
0%
1/32W
MF
01005
SOLENOID_TO_ARC_DRIVER_VSENSE_P

PP ARC VBOOST
VOLTAGE=8.0V

C3803
10UF
20%
6.3V
X5R-CERM
0402-8
ROOM=ARC

C3848
22UF
20%
10V
X5R-CERM
0603-1
ROOM=ARC

C3842
0.1UF
10%
16V
X5R-CERM
0201
ROOM=ARC

C3846
100PF
5%
16V
NP0-C0G
01005
ROOM=ARC

C3829
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=ARC

C3840
4.7UF
20%
6.3V
X5R-CERM1
402
ROOM=ARC

NOSTUFF
C3810
220PF
10%
10V
X7R-CERM
01005
ROOM=ARC

NOSTUFF
C3811
220PF
10%
10V
X7R-CERM
01005
ROOM=ARC

CRITICAL
L3800
1.2UH-20%-3.0A-0.080OHM
PIQA20161T-SM
ROOM=ARC

A1 B1 C1 D1 A4 A5 F5
VBST VP VA

U3800
CS35L21-XWZR
WLCSP
VER1
CRITICAL
ROOM=ARC

PP ARC SW
VOLTAGE=8.0V

A2
B2 SW

F2 ARC DRIVER FILT
C5 ARC DRIVER LDO FILT

E3 SOLENOID TO ARC DRIVER VSENSE R N
E2 SOLENOID TO ARC DRIVER VSENSE R P

FILT+
LDO_FILT

VSENSE-
VSENSE+

33 30 25 17 8 I2C1 AP SDA   D5 SDA
33 30 25 17 8 I2C1 AP SCL   D6 SCL

ARC TO AP INT L   A7 INT*
A6 RESET*

AP TO ARC RESET L
8

R3829
100K
5%
1/32W
MF
01005
ROOM=ARC

ISENSE-   F1 ARC ISENSE N
ISENSE+   E1 ARC ISENSE P

OUT+   D2 ARC DRIVER OUT POS
OUT-   C2

8 AP TO ARC STAYIN ALIVE   D7 ALIVE
PP1V8 VA   C7 AD0
1M INT PD

26 25 24 15 I2S AP TO ARC MCLK   E7 MCLK
1M INT PD

IREF+   B7 ARC IREF

R3835
44.2K
1%
1/32W
MF
01005
ROOM=ARC

NOSTUFF
C3804
220PF
5%
10V
C0G-CERM
01005
ROOM=ARC

C3801
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=ARC

NOSTUFF
C3805
220PF
5%
10V
C0G-CERM
01005
ROOM=ARC

R3802
39.2
1%
1/32W
MF
01005
ROOM=ARC

R3801
39.2
1%
1/32W
MF
01005
ROOM=ARC

25 24 8 I2S AP TO CODEC ASP BCLK   E6 SCLK
1M INT PD
25 24 8 I2S AP TO CODEC ASP LRCLK   F6 LRCK/FSYNC
1M INT PD
25 24 8 I2S AP TO CODEC ASP DOUT   F7 SDIN
1M INT PD
25 24 8 I2S CODEC TO AP ASP DIN   E5 SDOUT
1M INT PD

GNDP   GNDA
A3 B3 B4 C3 C4 D3 D4 B5 B6 C6 E4 F3 F4

ARC_ISENSE_R_P

XW3802
SHORT-10L-0.1MM-SM
ROOM=ARC
PLACE_NEAR=R3803.1:2mm

ARC_ISENSE_R_N

XW3801
SHORT-10L-0.1MM-SM
ROOM=ARC
PLACE_NEAR=R3803.2:2mm

NOTE:FERRITES SHORTED OUT BY XW-LINKS BETWEEN PADS
CUT LINK BEFORE POPULATING FERRITES
ROOM=ARC

XW3810
SHORT-10L-0.1MM-SM

FL3803
120OHM-25%-1.8A-0.06DCR
0402
ROOM=ARC
NOSTUFF

ARC_DRIVER_TO_SOLENOID_OUT_POS

R3803
0.100
1%
1/4W
MF
0402
ROOM=ARC

ARC_DRIVER_OUT_FILT_POS

ARC_DRIVER_OUT_FILT_NEG

FL3804
120OHM-25%-1.8A-0.06DCR
0402
ROOM=ARC
NOSTUFF

ARC_DRIVER_TO_SOLENOID_OUT_NEG

XW3811
SHORT-10L-0.1MM-SM

C3860
1000PF
10%
10V
X5R
01005
ROOM=ARC

C3863
1000PF
10%
25V
X5R
01005
ROOM=ARC

C3800
1000PF
10%
10V
X5R
01005
ROOM=ARC

C3802
1000PF
10%
10V
X5R
01005
ROOM=ARC

AUDIO:ARC DRIVER

DISPLAY & TOUCH - POWER SUPPLIES

CHESTNUT DISPLAY PMU
APN:338S1172

PP VCC MAIN

CRITICAL
L4000
1.0UH-20%-2.25A-0.15OHM
PIXB2016FE-SM
ROOM=CHESTNUT

C4000
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=CHESTNUT

PP CHESTNUT SW
VOLTAGE=6.3V

U4000
TPS65730A0PYFF
BGA
ROOM=CHESTNUT
CRITICAL

D1 VIN
B2 SW
A2 SYNC   NO INT PULL
D3 SCL
D2 SDA
C3 LCM_EN   200K INT PD
C2 RESET*   NO INT PULL
E1 ADCMUX

CF1 C4
CF2 E4
LCMBST B3
CPUMP B4
VNEG E3
VNEG(SUB) E2
HVLDO1 A4
HVLDO2 A3
HVLDO3 A1

C1 AGND
B1 PGND1
D4 PGND2

PP CHESTNUT CP
VOLTAGE=6.0V

C4002
10UF
20%
X5R-CERM
0402-8
ROOM=CHESTNUT

PN CHESTNUT CN
VOLTAGE=6.0V

PP6V0 LCM BOOST
VOLTAGE=6.0V

I2C0 AP SCL
I2C0 AP SDA
LCM TO CHESTNUT PWR EN
PMU TO OWL ACTIVE READY
CHESTNUT TO PMU ADCMUX

PN5V7 LCM MESON AVDDN
VOLTAGE=-5.7V

PP5V7 MESON AVDDH
VOLTAGE=5.7V

PP5V7 LCM AVDDH
VOLTAGE=5.7V

PP5V1 TOUCH VDDH
VOLTAGE=5.1V

C4003
1UF
20%
16V
CER-X5R
0201
ROOM=CHESTNUT

C4004
10UF
20%
10V
X5R-CERM
0402-8
ROOM=CHESTNUT

C4005
10UF
20%
10V
X5R-CERM
0402-8
ROOM=CHESTNUT

C4006
10UF
20%
10V
X5R-CERM
0402-8
ROOM=CHESTNUT

C4007
10UF
20%
10V
X5R-CERM
0402-8
ROOM=CHESTNUT

C4008
10UF
20%
10V
X5R-CERM
0402-8
ROOM=CHESTNUT

C4001
10UF
20%
10V
X5R-CERM
0402-8
ROOM=CHESTNUT

C4001 ADDED FOR ONZ
FAILURES CAUSED BY AVVDN

LED BACKLIGHT DRIVER
APN:353S00407

PP VCC MAIN

C4020
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=BACKLIGHT

C4021
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=BACKLIGHT

OMIT_TABLE
CRITICAL
L4021
1.0UH-20%-3.6A-0.060OHM
PIQA2016IT-SM
ROOM=BACKLIGHT

PP BL SW2
VOLTAGE=25V

CRITICAL
L4020
15UH-20%-0.72A-0.9OHM
PITA32251T-SM
ROOM=BACKLIGHT

PP BL SW1
VOLTAGE=25V

CRITICAL
D4021
DSN2
NSR05F30NXT5G
ROOM=BACKLIGHT

CRITICAL
D4020
NSR0530P2T5G
SOD-923-1
ROOM=BACKLIGHT

IN

PP LCM BL ANODE

C4022
100PF
5%
35V
NP0-C0G
01005
ROOM=BACKLIGHT

C4023
10UF
20%
35V
X5R-CERM
0603
ROOM=BACKLIGHT

U4020
LM3539A0YFFR
DSBGA
CRITICAL
ROOM=BACKLIGHT

D4 IN
D3 VIO/HWEN
C2 SDI
C3 SCK
B2 SDA
A2 SCL
D1 TRIG
D2 INHIBIT

OUT A1
C4
SW1 A4
SW2_1 A3
SW2_2 A4
LED1 C1
LED2 B1

B3 GND
B4 GND

PP LCM BL CAT1
PP LCM BL CAT2

PP1V8 SDRAM
DWI PMGR TO PMU BACKLIGHT MOSI
DWI PMGR TO BACKLIGHT SCLK

R4020
200K
1%
1/32W
MF
01005
ROOM=BACKLIGHT

I2C0 AP SDA

NOSTUFF
C4026
12PF
5%
16V
CERM
01005
ROOM=BACKLIGHT

R4021
1.00K
1%
1/32W
MF
01005
ROOM=BACKLIGHT

I2C0 AP SCL MUON

I2C0 AP SCL

C4024
12PF
5%
16V
CERM
01005
ROOM=BACKLIGHT

C4025
150PF
5%
10V
X7R
01005-1
ROOM=BACKLIGHT

AP TO MUON BL STROBE EN
BB TO LED DRIVER GSM BURST IND

MOJAVE MESA BOOST
APN:353S00671

U4040
LM3638A0
BGA
ROOM=MOJAVE
CRITICAL

PP VCC MAIN

C4040
10UF
20%
6.3V
CERM-X5R
0402-9
ROOM=MOJAVE

CRITICAL
L4040
1.0UH-20%-0.4A-0.636OHM
0403
ROOM=MOJAVE

PP18V0 MESA SW
VOLTAGE=18.0V

MOJAVE EN M

PP17V0 MOJAVE LDOIN
VOLTAGE=17.0V

B1 SW
A2 VIN
B2 EN_M
A3 EN_S
C2 LDOIN

VOUT C3
PMID C1

A1 PGND
B3 AGND

PP16V5 MESA
VOLTAGE=16.5V

C4042
100PF
5%
50V
NP0-C0G
0402
ROOM=MOJAVE

C4043
2.2UF
20%
25V
X5R-CERM
0402
ROOM=MOJAVE

C4041
2.2UF
20%
25V
X5R-CERM
0402
ROOM=MOJAVE

NOSTUFF
R4040
0.00
0%
1/32W
MF
01005
ROOM=MOJAVE

PP3V0 TRISTAR

MESA TO BOOST EN

R4041
0.00
0%
1/32W
MF
01005
ROOM=MOJAVE

MAMBA & MESA (M&M) FLEX

MAMBA & MESA CONNECTOR

THIS ONE ON MLB --->   516S00056 (RCPT)
516S00057 (PLUG)

CRITICAL
ROOM=MAMBA_MESA
J4100
BB35CRA223A
P-ST-SM
27

PP3V0 MESA CONN

SPI AP TO MESA MOSI CONN
SPI MESA TO AP MISO CONN
BUTTON MENU KEY CONN L

MESA TO BOOST EN CONN
SPI AP TO MESA SCLK CONN
MESA TO AP INT CONN
PP16V5 MESA CONN

PP1V8 MESA CONN

MAMBA TO LCM MDRIVE MAMBA CONN
LCM TO MAMBA MSYNC MAMBA CONN
AP TO TOUCH RESET CONN L
TP MAMBA HINT L
I2C_TOUCH_BI_MAMBA_PROX_SDA
I2C_TOUCH_TO_MAMBA_PROX_SCL
PP1V8 TOUCH TO MAMBA CONN

PP2V75 MAMBA CONN

P3MM-NSM
PP4100
ROOM=MAMBA_MESA

NOTE:PIN8 (MAMBA HARDWARE INTERRUPT) NOT ROUTED TO CUMULUS
BROUGHT TO PROBE POINT FOR ORB HW DEBUG

MESA POWER

FL4100
70-OHM-25%-0.28A
01005
ROOM=MAMBA_MESA

PP3V0 MESA

PP3V0 MESA CONN
VOLTAGE=3.0V

C4104
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=MAMBA_MESA

C4103
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=MAMBA_MESA

C4102
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=MAMBA_MESA

C4101
0.1UF
20%
6.3V
X5R-CERM
0201
ROOM=MAMBA_MESA

C4100
100PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

FL4105
70-OHM-25%-0.28A
01005
ROOM=MAMBA_MESA

PP1V8 MESA

PP1V8 MESA CONN
VOLTAGE=1.8V

C4106
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=MAMBA_MESA

C4105
100PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

FL4107
70-OHM-25%-0.28A
01005
ROOM=MAMBA_MESA

PP16V5 MESA

PP16V5 MESA CONN
VOLTAGE=16.5V

C4107
100PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

MAMBA POWER

NOTE: OUTPUT IMPEDANCE MUST BE >0.01-OHM
IN ORDER TO MEET CAP ESR REQUIREMENT PER LDO SPEC.

U4100
LP5907SNX-2.75
X2SON
VIN   VOUT
ROOM=MAMBA_MESA
EN
GND EPAD

PP VCC MAIN

PP2V75 MAMBA LDO
VOLTAGE=2.75V

C4127
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=MAMBA_MESA

C4128
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=MAMBA_MESA

MAMBA EXT LDO EN

FL4120
70-OHM-25%-0.28A
01005
ROOM=MAMBA_MESA

PP2V75 MAMBA CONN
VOLTAGE=2.75V

C4124
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=MAMBA_MESA

C4123
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=MAMBA_MESA

C4122
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=MAMBA_MESA

C4121
2.2UF
20%
6.3V
X5R-CERM
0201
ROOM=MAMBA_MESA

C4120
100PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

R4125
0.00
1%
1/32W
MF
01005
ROOM=MAMBA_MESA

PP1V8 TOUCH

PP1V8 TOUCH TO MAMBA CONN
VOLTAGE=1.8V

C4126
2.2UF
20%
16V
X5R-CERM
0201
ROOM=MAMBA_MESA

C4125
100PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

MESA DIGITAL I/O

FL4110
120-OHM-210MA
01005
ROOM=MAMBA_MESA

SPI AP TO MESA MOSI

SPI AP TO MESA MOSI CONN

C4110
56PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

R4111
0.00
1%
1/32W
MF
01005
ROOM=MAMBA_MESA

SPI AP TO MESA SCLK

SPI AP TO MESA SCLK CONN

C4111
56PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

FL4112
120-OHM-210MA
01005
ROOM=MAMBA_MESA

SPI MESA TO AP MISO

SPI MESA TO AP MISO CONN

C4112
56PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

R4115
681
1%
1/32W
MF
01005
ROOM=MAMBA_MESA

MESA TO AP INT

MESA TO AP INT CONN

C4115
100PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

R4116
681
1%
1/32W
MF
01005
ROOM=MAMBA_MESA

MESA TO BOOST EN

MESA TO BOOST EN CONN

C4116
100PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

DEFAULT_RESISTOR_10_GOHM 100-OHM_2_1

R4117
100
5%
1/32W
MF
01005
ROOM=MAMBA_MESA

BUTTON MENU KEY L

BUTTON MENU KEY CONN L

C4118
0.01UF
10%
6.3V
X5R
01005
ROOM=MAMBA_MESA

C4117
100PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

MAMBA DIGITAL I/O

FL4130
120-OHM-210MA
01005
ROOM=MAMBA_MESA

MAMBA TO LCM MDRIVE LCM CONN

MAMBA TO LCM MDRIVE MAMBA CONN

C4130
56PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

FL4131
01005
ROOM=MAMBA_MESA

120-OHM-210MA

LCM TO MAMBA MSYNC LCM CONN

LCM TO MAMBA MSYNC MAMBA CONN

C4131
56PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

PP1V8 TOUCH

NOSTUFF
R4130
2.0K
1%
1/32W
MF
01005
ROOM=MAMBA_MESA

NOSTUFF
R4131
2.0K
1%
1/32W
MF
01005
ROOM=MAMBA_MESA

I2C_TOUCH_TO_MAMBA_PROX_SCL
CKPLUS_WAIVE=I2C_PULLUP

C4132
56PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

I2C_TOUCH_BI_MAMBA_PROX_SDA
CKPLUS_WAIVE=I2C_PULLUP

C4133
56PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

FL4134
120-OHM-210MA
01005
ROOM=MAMBA_MESA

AP TO TOUCH RESET L

AP TO TOUCH RESET CONN L

C4134
100PF
5%
16V
NP0-COG
01005
ROOM=MAMBA_MESA

NOTE:TOUCH I2C PULL-UPS TO PP1V8_TOUCH INSIDE KEPLER
ADDING R4130, R4131 AS OPTION FOR TWEAKING VALUES.

DISPLAY & TOUCH FLEX

DISPLAY POWER

PP5V7 LCM AVDDH

FL4200 240OHM-350MA
0201 ROOM=KEPLER_B2B
PP5V7 LCM AVDDH CONN

C4200 2.2UF X5R-CERM 0201 ROOM=KEPLER_B2B
C4201 2.2UF X5R-CERM 0201 ROOM=KEPLER_B2B
C4202 2.2UF X5R-CERM 0201 ROOM=KEPLER_B2B
C4203 2.2UF X5R-CERM 0201 ROOM=KEPLER_B2B
C4204 100PF NP0-COG 01005 ROOM=KEPLER_B2B

PP1V8

FL4205 240OHM-350MA 0201 ROOM=KEPLER_B2B
PP1V8 LCM CONN VOLTAGE=1.8V

C4205 2.2UF X5R-CERM 0201 ROOM=KEPLER_B2B
C4206 100PF NP0-COG 01005 ROOM=KEPLER_B2B

PN5V7 LCM MESON AVDDN

FL4207 70-OHM-25%-0.28A 01005 ROOM=KEPLER_B2B
PN5V7 LCM MESON AVDDN CONN VOLTAGE=-5.7V

C4207 100PF NP0-COG 01005 ROOM=KEPLER_B2B

PP5V7 MESON AVDDH

FL4208 240OHM-350MA 0201 ROOM=KEPLER_B2B
PP5V7 MESON AVDDH CONN VOLTAGE=5.7V

C4208 100PF NP0-COG 01005 ROOM=KEPLER_B2B

PP1V8 TOUCH

FL4209 240OHM-350MA 0201 ROOM=KEPLER_B2B
PP1V8 TOUCH CONN VOLTAGE=1.8V

C4215 2.2UF X5R-CERM 0201 ROOM=KEPLER_B2B
C4209 100PF NP0-COG 01005 ROOM=KEPLER_B2B

PP5V1 TOUCH VDDH

FL4210 240OHM-350MA 0201 ROOM=KEPLER_B2B
PP5V1 TOUCH VDDH CONN VOLTAGE=5.1V

C4210 100PF NP0-COG 01005 ROOM=KEPLER_B2B

BACKLIGHT

PP LCM BL ANODE

FL4211 240OHM-350MA 0201 ROOM=KEPLER_B2B
PP LCM BL ANODE CONN VOLTAGE=25V

C4211 100PF NP0-COG 01005 ROOM=KEPLER_B2B

PP LCM BL CAT1

FL4212 240OHM-350MA 0201 ROOM=KEPLER_B2B
PP LCM BL CAT1 CONN VOLTAGE=25V

C4212 100PF NP0-COG 01005 ROOM=KEPLER_B2B

PP LCM BL CAT2

FL4213 240OHM-350MA 0201 ROOM=KEPLER_B2B
PP LCM BL CAT2 CONN VOLTAGE=25V

C4213 100PF NP0-COG 01005 ROOM=KEPLER_B2B

DISPLAY MIPI

MIPI AP TO LCM CLK P
CRITICAL L4200 65-OHM-0.1A-0.7-2GHZ TAM0605 ROOM=KEPLER_B2B
MIPI AP TO LCM CLK CONN P

MIPI AP TO LCM CLK N
MIPI AP TO LCM CLK CONN N

MIPI AP TO LCM DATA0 P
CRITICAL L4201 65-OHM-0.1A-0.7-2GHZ TAM0605 ROOM=KEPLER_B2B
MIPI AP TO LCM DATA0 CONN P

MIPI AP TO LCM DATA0 N
MIPI AP TO LCM DATA0 CONN N

MIPI AP TO LCM DATA1 P
CRITICAL L4202 65-OHM-0.1A-0.7-2GHZ TAM0605 ROOM=KEPLER_B2B
MIPI AP TO LCM DATA1 CONN P

MIPI AP TO LCM DATA1 N
MIPI AP TO LCM DATA1 CONN N

DISPLAY EEPROM I2C

I2C2 AP SDA

NOSTUFF C4223 56PF NP0-COG 01005 ROOM=KEPLER_B2B

I2C2 AP SCL

NOSTUFF C4224 56PF NP0-COG 01005 ROOM=KEPLER_B2B

DISPLAY CONTROL SIGNALS

LCM TO CHESTNUT PWR EN
FL4220 120-OHM-210MA 01005 ROOM=KEPLER_B2B
LCM TO CHESTNUT PWR EN CONN

C4220 100PF NP0-COG 01005 ROOM=KEPLER_B2B

AP TO LCM RESET L
FL4221 120-OHM-210MA 01005 ROOM=KEPLER_B2B
AP TO LCM RESET CONN L

R4220 100K 1/32W MF 01005 ROOM=KEPLER_B2B
C4221 100PF NP0-COG 01005 ROOM=KEPLER_B2B

PMU TO LCM PANICB
R4222 10 1/32W MF 5% 01005 ROOM=KEPLER_B2B
PMU TO LCM PANICB CONN

C4222 100PF NP0-COG 01005 ROOM=KEPLER_B2B

OWL TO TOUCH INTERFACE

LCM TO OWL BSYNC
FL4230 120-OHM-210MA 01005 ROOM=KEPLER_B2B
LCM TO OWL BSYNC CONN

C4230 56PF NP0-COG 01005 ROOM=KEPLER_B2B

UART OWL TO TOUCH TXD
FL4231 120-OHM-210MA 01005 ROOM=KEPLER_B2B
UART OWL TO TOUCH TXD CONN

C4231
56PF NP0-COG 01005 ROOM=KEPLER_B2B

TOUCH TO OWL ACCEL DATA REQUEST
FL4232 120-OHM-210MA 01005 ROOM=KEPLER_B2B
TOUCH TO OWL ACCEL DATA REQUEST CONN

C4232 56PF NP0-COG 01005 ROOM=KEPLER_B2B

PROX TO TOUCH INTERFACE

PP1V8 TOUCH
R4240 100K 1/32W MF 01005 ROOM=KEPLER_B2B
C4240 0.22UF X5R 01005-1

U4240 74AUP1G04GX SOT1226 ROOM=KEPLER_B2B CRITICAL

TOUCH TO PROX TX EN CONN L
TOUCH TO PROX TX EN BUFF

TOUCH TO PROX RX EN FCAM CONN
FL4241 120-OHM-210MA 01005 ROOM=KEPLER_B2B
TOUCH TO PROX RX EN LCM CONN

C4241 100PF NP0-COG 01005 ROOM=KEPLER_B2B

DISPLAY CONNECTOR

CRITICAL
J4200
BM28P0.6-44DS-0.35V
F-ST-SM
45   46

Pin	Signal	Pin	Signal
1	PP LCM BL CAT1 CONN	2	MAMBA TO LCM MDRIVE LCM CONN
3	PP LCM BL ANODE CONN	4	NC KEPLER MESON TEST MUX2 CONN
5	PP LCM BL CAT2 CONN	6	NC KEPLER MESON TEST MUX0 CONN
7		8	SPI AP TO TOUCH SCLK CONN
9	MIPI AP TO LCM CLK CONN N	10	TOUCH TO PROX RX EN LCM CONN
11	MIPI AP TO LCM CLK CONN P	12	PROX TO TOUCH RX LCM CONN
13		14	SPI AP TO TOUCH CS CONN L
15	MIPI AP TO LCM DATA1 CONN N	16	TOUCH TO OWL ACCEL DATA REQUEST CONN
17	MIPI AP TO LCM DATA1 CONN P	18	I2C2 AP SDA
19		20	I2C TOUCH BI MAMBA PROX SDA
21	MIPI AP TO LCM DATA0 CONN N	22	SPI TOUCH TO AP MISO CONN
23	MIPI AP TO LCM DATA0 CONN P	24	SPI AP TO TOUCH MOSI CONN
25	NC KEPLER PHOTON PIFA CONN	26	LCM TO OWL BSYNC CONN
27	LCM TO CHESTNUT PWR EN CONN	28	LCM TO CHESTNUT PWR EN CONN
29	LCM TO MAMBA MSYNC LCM CONN	30	PP5V1 TOUCH VDDH CONN
31	PMU TO LCM PANICB CONN	32	AP TO TOUCH RESET CONN L
33	AP TO LCM RESET CONN L	34	TOUCH TO PROX TX EN CONN L
35	PP5V7 MESON AVDDH CONN	36	I2C2 AP SCL
37	PP1V8 LCM CONN	38	I2C TOUCH TO MAMBA PROX SCL
39	PN5V7 LCM MESON AVDDN CONN	40	UART OWL TO TOUCH TXD CONN
41	PP5V7 LCM AVDDH CONN	42	TOUCH TO AP INT L CONN
43	PP1V8 TOUCH CONN	44	AP TO TOUCH CLK32K RESET CONN L

47   48
ROOM=KEPLER_B2B

AP TO TOUCH INTERFACE

SPI AP TO TOUCH CS L
FL4250 120-OHM-210MA 01005 ROOM=KEPLER_B2B
SPI AP TO TOUCH CS CONN L

C4250 56PF NP0-COG 01005 ROOM=KEPLER_B2B

SPI AP TO TOUCH SCLK
FL4251 120-OHM-210MA 01005 ROOM=KEPLER_B2B
SPI AP TO TOUCH SCLK CONN

C4251 56PF NP0-COG 01005 ROOM=KEPLER_B2B

SPI AP TO TOUCH MOSI
FL4252 120-OHM-210MA 01005 ROOM=KEPLER_B2B
SPI AP TO TOUCH MOSI CONN

C4252 56PF NP0-COG 01005 ROOM=KEPLER_B2B

SPI TOUCH TO AP MISO
FL4253 120-OHM-210MA 01005 ROOM=KEPLER_B2B
SPI TOUCH TO AP MISO CONN

C4253 56PF NP0-COG 01005 ROOM=KEPLER_B2B

TOUCH TO AP INT L
FL4254 120-OHM-210MA 01005 ROOM=KEPLER_B2B
TOUCH TO AP INT L CONN

C4254 100PF NP0-COG 01005 ROOM=KEPLER_B2B

AP TO TOUCH CLK32K RESET L
FL4255 120-OHM-210MA 01005 ROOM=KEPLER_B2B
AP TO TOUCH CLK32K RESET CONN L

C4255 100PF NP0-COG 01005 ROOM=KEPLER_B2B

TRISTAR 2 (A3)

APN:343S0695

PP3V0 TRISTAR   33 31 27 19 15

PP3V3 ACC   15

PP5V0 USB   3 17 31

C4500
1.0UF
20%
6.3V
X5R
0201-1
ROOM=TRISTAR

C4501
0.1UF
20%
6.3V
X5R-CERM
01005
ROOM=TRISTAR

PP1V8 SDRAM   33 31 27 24 16 15 14 12 8

C4502
0.01UF
10%
6.3V
X5R
01005
ROOM=TRISTAR

CRITICAL
ROOM=TRISTAR

REVERSE GATE

Q4500
CSD68822F4
0402
ROOM=TRISTAR
CRITICAL

R4500
10K
5%
1/32W
MF
01005
ROOM=TRISTAR

TRISTAR TO PMU USB BRICK ID   16

PLACE_NEAR=U2000.T5:8mm

R4510
6.34K
1%
1/32W
MF
01005
ROOM=PMU

C4510
0.01UF
10%
6.3V
X5R
01005
ROOM=PMU
PLACE_NEAR=U2000.T5:8mm

U4500
CBTL1610A3UK
WLCSP

F3 VDD_1V8
F4 VDD_3V0
D5 ACC_PWR

MIKEYBUS DATA P   C3 DIG_DP
MIKEYBUS DATA N   C4 DIG_DN

USB BB DATA P   A1 USB1_DP
USB BB DATA N   B1 USB1_DN

TRISTAR USB BRICK ID R   C2 BRICK_ID

L4521
15NH-250MA
0201
ROOM=TRISTAR

USB AP DATA P   5

USB AP TRISTAR DATA P   A3 USB0_DP
USB AP TRISTAR DATA N   B3 USB0_DN

L4522
15NH-250MA
0201
ROOM=TRISTAR

USB AP DATA N   5

UART AP TO ACCESSORY TXD   E2 UART0_TX
UART ACCESSORY TO AP RXD   E1 UART0_RX

UART AP DEBUG TXD   F2 UART1_TX
UART AP DEBUG RXD   F1 UART1_RX

D2 UART2_TX
D1 UART2_RX
NCX

SWD DOCK TO AP SWCLK   A5 JTAG_CLK
SWD DOCK BI AP SWDIO   B5 JTAG_DIO

P_IN F6 PP TRISTAR PIN   VOLTAGE=5.0V
ACC1 C5 PP TRISTAR ACC1   VOLTAGE=4.3V   3 31
ACC2 E5 PP TRISTAR ACC2   VOLTAGE=4.3V   3 31

DP1 A2 TRISTAR DP1 CONN P   3 31
DN1 B2 TRISTAR DP1 CONN N   3 31

DP2 A4 TRISTAR DP2 CONN P   3 31
DN2 B4 TRISTAR DP2 CONN N   3 31

CON_DET_L E3 TRISTAR CON DETECT L   3 31

POW_GATE_EN* D6 TRISTAR TO TIGRIS VBUS OFF   17 30

SWITCH_EN E4 PMU TO OWL ACTIVE READY   5 9 16 27
HOST_RESET B6 TRISTAR TO PMU HOST RESET   16

SDA D3 I2C1 AP SDA   8 17 25 26 33
SCL D4 I2C1 AP SCL   8 17 25 26 33
INT C6 TRISTAR TO AP INT   8 16

BYPASS E6 TRISTAR BYPASS

1.0UF

F5 DVSS
C1 DVSS
A6 DVSS

C4503
1UF
20%
16V
CER-X5R
0201
ROOM=TRISTAR

C4504
20%
6.3V
X5R
0201-1
ROOM=TRISTAR

TRISTAR TO TIGRIS VBUS OFF   30 17

ROOM=TRISTAR
P3MM-NSM
SM
PP4500

DOCK FLEX CONNECTOR

AUDIO JACK

ANTENNA

DOCK FLEX CONNECTOR

HPHONE TO CODEC DETECT
R4600
3.3K
1,2
5%
1/32W
MF
01005
ROOM=DOCK_B2B
HPHONE TO CODEC DETECT CONN

C4600
56PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

FL4620
120-OHM-210MA
PP3V0 TRISTAR
01005
ROOM=DOCK_B2B
PP3V0 LAT CONN
VOLTAGE=3.0V

C4620
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

CRITICAL
ROOM=DOCK_B2B
J4600
24-5859-040-XXX-829
F-ST-SM

45
41 42

FL4600
FERR-33-OHM-0.8A-0.09-OHM
CODEC TO HPHONE HS3
0201
ROOM=DOCK_B2B
CODEC TO HPHONE HS3 CONN

DZ4600
6.8V-100PF
0201
ROOM=DOCK_B2B
NO_XNET_CONNECTION=1

C4699
220PF
100
10%
X7R-CERM
01005
ROOM=DOCK_B2B

FL4621
120-OHM-210MA
PP1V8 SDRAM
VOLTAGE=1.8V
01005
ROOM=DOCK_B2B
PP1V8 LAT CONN
VOLTAGE=1.8V

C4621
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

SPEAKERAMP TO SPEAKER OUT POS	SPEAKERAMP TO SPEAKER OUT NEG
SPEAKER TO SPEAKERAMP VSENSE CONN P	SPEAKER TO SPEAKERAMP VSENSE CONN N
ARC DRIVER TO SOLENOID OUT POS	ARC DRIVER TO SOLENOID OUT NEG
SOLENOID TO ARC DRIVER VSENSE CONN P	SOLENOID TO ARC DRIVER VSENSE CONN N
AP TO HP HS4 CTRL CONN	CODEC TO HPHONE L CONN
HPHONE TO CODEC DETECT CONN	CODEC TO HPHONE R CONN
CODEC TO HPHONE HS4 REF CONN	CODEC TO HPHONE HS4 CONN
AP TO HP HS3 CTRL CONN	
CODEC TO HPHONE HS3 REF CONN	CODEC TO HPHONE HS3 CONN
LOWERMIC1 TO CODEC AIN1 CONN N	LOWERMIC1 TO CODEC AIN1 CONN P
PP CODEC TO LOWERMIC1 BIAS CONN	PP TRISTAR ACC1 CONN
LOWERMIC1 BIAS FILT RET	
RFFE5 BB TO ANT DATA CONN	TRISTAR DP1 CONN P
PP1V8 LAT CONN	TRISTAR DP1 CONN N
TRISTAR CON DETECT CONN L	
RFFE5 BB TO ANT SCLK CONN	TRISTAR DP2 CONN N
BB LAT GPIO1 CONN	TRISTAR DP2 CONN P
PP3V0 LAT CONN	PP TRISTAR ACC2 CONN
LOWERMIC4 BIAS FILT RET	PP CODEC TO LOWERMIC4 BIAS CONN
LOWERMIC4 TO CODEC AIN2 CONN N	LOWERMIC4 TO CODEC AIN2 CONN P

43 44
46

FL4601
FERR-33-OHM-0.8A-0.09-OHM
CODEC TO HPHONE HS4
0201
ROOM=DOCK_B2B
CODEC TO HPHONE HS4 CONN

DZ4601
6.8V-100PF
0201
ROOM=DOCK_B2B
NO_XNET_CONNECTION=1

C4698
220PF
100
10%
X7R-CERM
01005
ROOM=DOCK_B2B

R4622
0.00
0% MF 01005 1/32W
RFFE5 BB TO ANT SCLK
RFFE5 BB TO ANT SCLK CONN
ROOM=DOCK_B2B

C4622
56PF
16V
NP0-C0G
01005
ROOM=DOCK_B2B

FL4602
600-OHM-25%-0.28A-0.75OHM
CODEC TO HPHONE HS4 REF
0201
ROOM=DOCK_B2B
CODEC TO HPHONE HS4 REF CONN

DZ4602
6.8V-100PF
01005
ROOM=DOCK_B2B
NO_XNET_CONNECTION=1

R4623
0.00
0% MF 01005 1/32W
RFFE5 BB TO ANT DATA
RFFE5 BB TO ANT DATA CONN
ROOM=DOCK_B2B

C4623
56PF
16V
NP0-C0G
01005
ROOM=DOCK_B2B

FL4603
600-OHM-25%-0.28A-0.75OHM
CODEC TO HPHONE HS3 REF
0201
ROOM=DOCK_B2B
CODEC TO HPHONE HS3 REF CONN

DZ4603
6.8V-100PF
01005
ROOM=DOCK_B2B
NO_XNET_CONNECTION=1

FL4624
120-OHM-210MA
BB LAT GPIO1
01005
ROOM=DOCK_B2B
BB LAT GPIO1 CONN

C4624
56PF
16V
NP0-C0G
01005
ROOM=DOCK_B2B

PP5V0 USB
VOLTAGE=5.0V

DEFAULT_CAPACITOR_220.000000pF_2_1

C4650	C4651	C4652	NOSTUFF C4654	C4653	C4655	C4656
0.1UF	0.1UF	0.1UF	100PF	56PF	220PF	100PF
25%	10%	10%	5%	5%	10%	5%
25V	25V	25V	16V	16V	100	16V
25%	25%	25%	NP0-C0G	NP0-C0G	X7R-CERM	NP0-C0G
0201	0201	0201	01005	01005	0201	01005
ROOM=DOCK	ROOM=DOCK	ROOM=DOCK	ROOM=DOCK	ROOM=DOCK	ROOM=DOCK	ROOM=DOCK

FL4604
FERR-33-OHM-0.8A-0.09-OHM
CODEC TO HPHONE L
0201
ROOM=DOCK_B2B
CODEC TO HPHONE L CONN

DZ4604
6.8V-100PF
0201
ROOM=DOCK_B2B
NO_XNET_CONNECTION=1

C4697
220PF
100
10%
X7R-CERM
01005
ROOM=DOCK_B2B

FL4606
120-OHM-210MA
AP TO HP HS3 CTRL
01005
ROOM=DOCK_B2B
AP TO HP HS3 CTRL CONN

C4606
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

TRISTAR

FL4605
FERR-33-OHM-0.8A-0.09-OHM
CODEC TO HPHONE R
0201
ROOM=DOCK_B2B
CODEC TO HPHONE R CONN

DZ4610
6.8V-100PF
01005
ROOM=DOCK_B2B
NO_XNET_CONNECTION=1

C4696
220PF
100
10%
X7R-CERM
01005
ROOM=DOCK_B2B

FL4607
120-OHM-210MA
AP TO HP HS4 CTRL
01005
ROOM=DOCK_B2B
AP TO HP HS4 CTRL CONN

C4607
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

TRISTAR CON DETECT L
1/32W
R4640
5%
MF
01005
1.00K
TRISTAR CON DETECT CONN L

C4640
27PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

LOWER MIC1/4

SPEAKER/ARC

FL4641
10-OHM-1.1A
PP TRISTAR ACC1
01005
ROOM=DOCK_B2B
PP TRISTAR ACC1 CONN
VOLTAGE=4.3V

C4641
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

FL4610
120-OHM-210MA
LOWERMIC1 TO CODEC AIN1 P
01005
ROOM=DOCK_B2B
LOWERMIC1 TO CODEC AIN1 CONN P

C4610
56PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

FL4630
120-OHM-210MA
SPEAKER TO SPEAKERAMP VSENSE P
01005
ROOM=DOCK_B2B
SPEAKER TO SPEAKERAMP VSENSE CONN P

C4630
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

FL4642
10-OHM-1.1A
PP TRISTAR ACC2
01005
ROOM=DOCK_B2B
PP TRISTAR ACC2 CONN
VOLTAGE=4.3V

C4642
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

FL4611
120-OHM-210MA
LOWERMIC1 TO CODEC AIN1 N
01005
ROOM=DOCK_B2B
LOWERMIC1 TO CODEC AIN1 CONN N

C4611
56PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

01005

FL4631
120-OHM-210MA
SPEAKER TO SPEAKERAMP VSENSE N
01005
ROOM=DOCK_B2B
SPEAKER TO SPEAKERAMP VSENSE CONN N

C4631
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

ARC DRIVER TO SOLENOID OUT POS

C4636
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

FL4612
120-OHM-210MA
PP CODEC TO LOWERMIC1 BIAS
01005
ROOM=DOCK_B2B
PP CODEC TO LOWERMIC1 BIAS CONN
VOLTAGE=2.86V

C4612
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

FL4632
120-OHM-210MA
SOLENOID TO ARC DRIVER VSENSE P
01005
ROOM=DOCK_B2B
SOLENOID TO ARC DRIVER VSENSE CONN P

C4632
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

ARC DRIVER TO SOLENOID OUT NEG

C4637
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

FL4613
120-OHM-210MA
LOWERMIC4 TO CODEC AIN2 P
01005
ROOM=DOCK_B2B
LOWERMIC4 TO CODEC AIN2 CONN P

C4613
56PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

FL4633
120-OHM-210MA
SOLENOID TO ARC DRIVER VSENSE N
01005
ROOM=DOCK_B2B
SOLENOID TO ARC DRIVER VSENSE CONN N

C4633
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

FL4614
120-OHM-210MA
LOWERMIC4 TO CODEC AIN2 N
01005
ROOM=DOCK_B2B
LOWERMIC4 TO CODEC AIN2 CONN N

C4614
56PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

SPEAKERAMP TO SPEAKER OUT POS

C4634
220PF
100
10%
X7R-CERM
01005
ROOM=DOCK_B2B

FL4615
120-OHM-210MA
PP CODEC TO LOWERMIC4 BIAS
01005
ROOM=DOCK_B2B
PP CODEC TO LOWERMIC4 BIAS CONN
VOLTAGE=2.86V

C4615
100PF
5%
16V
NP0-C0G
01005
ROOM=DOCK_B2B

SPEAKERAMP TO SPEAKER OUT NEG

C4635
220PF
100
10%
X7R-CERM
01005
ROOM=DOCK_B2B

BUTTON FLEX

BUTTON FLEX CONNECTOR

THIS ONE ON MLB --->   516S00058 (RCPT)
                 516S00059 (PLUG)

ROOM=BUTTON_B2B
CRITICAL
J4700
505066-1210
F-ST-SM

MIC2
ANC REF MIC

FL4700
120-OHM-210MA
PP CODEC TO REARMIC2 BIAS
01005
ROOM=BUTTON_B2B
PP CODEC TO REARMIC2 BIAS CONN
VOLTAGE=2.86V

C4700
100PF
5%
16V
NP0-C0G
01005
ROOM=BUTTON_B2B

FL4701
120-OHM-210MA
REARMIC2 TO CODEC AIN3 P
01005
ROOM=BUTTON_B2B
REARMIC2 TO CODEC AIN3 CONN P

C4701
56PF
5%
16V
NP0-C0G
01005
ROOM=BUTTON_B2B

FL4702
120-OHM-210MA
REARMIC2 TO CODEC AIN3 N
01005
ROOM=BUTTON_B2B
REARMIC2 TO CODEC AIN3 CONN N

C4702
56PF
5%
16V
NP0-C0G
01005
ROOM=BUTTON_B2B

BUTTON VOL DOWN CONN L   1   2   LED MODULE NTC CONN
BUTTON VOL UP CONN L   3   4   BUTTON HOLD KEY CONN L
BUTTON RINGER A CONN   5   6
PP CODEC TO REARMIC2 BIAS CONN   7   8
REARMIC2 TO CODEC AIN3 CONN P   9   10
REARMIC2 TO CODEC AIN3 CONN N   11   12   PP LED DRIVER COOL LED
13   14
15   16
PP LED DRIVER WARM LED

STROBE:
WARM LED
COOL LED
MODULE NTC

PP LED DRIVER WARM LED
C4723
100PF
5%
16V
NP0-C0G
01005
ROOM=BUTTON_B2B
C4724
27PF
5%
16V
NP0-C0G
01005
ROOM=BUTTON_B2B

PP LED DRIVER COOL LED
C4721
100PF
5%
16V
NP0-C0G
01005
ROOM=BUTTON_B2B
C4722
27PF
5%
16V
NP0-C0G
01005
ROOM=BUTTON_B2B

BUTTON HOLD KEY L
R4710
0.00
0V
1/32W
MF
01005
ROOM=BUTTON_B2B
BUTTON HOLD KEY CONN L

C4710
27PF
6.3V
5%
NP0-C0G
0201
ROOM=BUTTON_B2B

DZ4710
5.5V-6.2PF
0201
ROOM=BUTTON_B2B

SOUTH AC GND SCREW

FL4720
120-OHM-210MA
LED MODULE NTC
01005
ROOM=BUTTON_B2B
LED MODULE NTC CONN

R4720
51.1K
1/32W
1%
MF
01005
ROOM=BUTTON_B2B

C4720
100PF
5%
16V
NP0-C0G
01005
ROOM=BUTTON_B2B

BUTTON RINGER A
FL4711
120-OHM-210MA
01005
ROOM=BUTTON_B2B
BUTTON RINGER A CONN

C4711
27PF
6.3V
5%
NP0-C0G
0201
ROOM=BUTTON_B2B

DZ4711
5.5V-6.2PF
0201
ROOM=BUTTON_B2B

SOUTH AC GND SCREW

BUTTONS:
HOLD
RINGER
VOL UP/DOWN

BUTTON VOL DOWN L
FL4712
120-OHM-210MA
01005
ROOM=BUTTON_B2B
BUTTON VOL DOWN CONN L

C4712
100PF
5%
16V
NP0-C0G
01005
ROOM=BUTTON_B2B

DZ4712
12V-33PF
01005-1
ROOM=BUTTON_B2B

SOUTH AC GND SCREW

BUTTON VOL UP L
FL4713
120-OHM-210MA
01005
ROOM=BUTTON_B2B
BUTTON VOL UP CONN L

C4713
100PF
5%
16V
NP0-C0G
01005
ROOM=BUTTON_B2B

DZ4713
12V-33PF
01005-1
ROOM=BUTTON_B2B

SOUTH AC GND SCREW

BASEBAND, WLAN, BT & STOCKHOLM

I456

RADIO_MLB_MIMO

SHARED POWER

PP_VCC_MAIN
PP3V0_TRISTAR   SUBDESIGN_SUFFIX=RF
PP1V8_SDRAM

PP_VCC_MAIN
PP3V0_TRISTAR
PP1V8_SDRAM

BASEBAND	WLAN

BASEBAND / WLAN

PCIE_AP_TO_BB_TXD_P
PCIE_AP_TO_BB_TXD_N

PCIE_BB_TO_AP_RXD_P
PCIE_BB_TO_AP_RXD_N

PCIE_AP_TO_BB_REFCLK_P
PCIE_AP_TO_BB_REFCLK_N

PCIE_AP_TO_BB_RESET_L
PCIE_BB_BI_AP_CLKREQ_L
BB_TO_PMU_PCIE_HOST_WAKE_L
AP_TO_BB_PCIE_DEV_WAKE

I2S_AP_TO_BB_LRCLK
I2S_AP_TO_BB_BCLK
I2S_AP_TO_BB_DOUT
I2S_BB_TO_AP_DIN

AP_TO_BB_RADIO_ON_L
PMU_TO_BB_PMIC_RESET_L
AP_TO_BB_RESET_L

BB_TO_AP_RESET_DETECT_L
BB_TO_LED_DRIVER_GSM_BURST_IND
AP_TO_BB_MESA_UP_L
BB_TO_AP_GPS_TIME_MARK
AP_TO_BB_COREDUMP
BB_IPC_GPIO
LCM_TO_OWL_BSYNC
UART_OWL_TO_BB_TXD
UART_BB_TO_OWL_RXD

USB_BB_DATA_P
USB_BB_DATA_N
PMU_TO_BB_USB_VBUS_DETECT

SWD_AP_PERIPHERAL_SWCLK
SWD_AP_BI_BB_SWDIO

RFFE5_BB_TO_ANT_SCLK
RFFE5_BB_TO_ANT_DATA
BB_LAT_GPIO1

BB_TO_PMU_AMUX_LDO11_SIM1
BB_TO_PMU_AMUX_SMPS1
BB_TO_PMU_AMUX_SMPS3
BB_TO_PMU_AMUX_SMPS4

STOCKHOLM

50_AP_UAT_FEED
50_AP_WIFI_5G_CONN_ANT
AP_TO_STOCKHOLM_ANT

PP1V8
DFU_STATUS
FORCE_DFU
NC_PMU_AMUX_AY
NC_PMU_AMUX_BY
PMU_TO_SYSTEM_COLD_RESET_L
I2C0_AP_SCL
I2C0_AP_SDA
I2C1_AP_SCL
I2C1_AP_SDA
BUTTON_HOLD_KEY_L
BUTTON_MENU_KEY_L
BUTTON_RINGER_A
BUTTON_VOL_DOWN_L
BUTTON_VOL_UP_L
NC_PMU_GPIO20
NC_PMU_GPIO21

UART_AP_DEBUG_TXD
UART_AP_DEBUG_RXD
NC_AP_RESERVED2

PP_VCC_MAIN
PP3V0_TRISTAR
PP1V8_SDRAM

PCIE0_AP_TO_BB_TX_P
PCIE0_AP_TO_BB_TX_N

PCIE0_BB_TO_AP_TX_P
PCIE0_BB_TO_AP_TX_N

PCIE0_AP_TO_BB_REFCLK_P
PCIE0_AP_TO_BB_REFCLK_N

PCIE0_AP_TO_BB_PERST_L
PCIE0_AP_TO_BB_CLKREQ_L
PCIE0_BB_TO_PMU_HOST_WAKE_L
PCIE0_AP_TO_BB_DEV_WAKE

I2S_AP_TO_BB_WS
I2S_AP_TO_BB_CLK
I2S_AP_TO_BB_TX
I2S_BB_TO_AP_TX

AP_TO_BBPMU_RADIO_ON_L
PMU_TO_BBPMU_RESET_L
AP_TO_BB_RST_L

BB_TO_AP_RESET_DET_L
BB_TO_AP_GSM_TXBURST_IND
AP_TO_BB_MESA_ON_L
BB_TO_AP_GPS_TIME_MARK
AP_TO_BB_COREDUMP_TRIG
AP_TO_BB_IPC_GPIO
TOUCH_TO_BBPMU_FORCE_PWM
UART0_OWL_TO_BB_TX
UART0_BB_TO_OWL_TX

USB_BB_P
USB_BB_N
USB_BB_VBUS_DETECT

SWD_CLK_BB_JTAG_TCK
SWD_IO_BB_JTAG_TMS

75_RFFE5_SCLK_BB
75_RFFE5_SDATA_BB
RFFE_BUFFER_LAT_GPIO1

BB_TO_PMU_AMUX_LDO11_SIM1
BB_TO_PMU_AMUX_SMPS1
BB_TO_PMU_AMUX_SMPS3
BB_TO_PMU_AMUX_SMPS4

ANT

50_UPPER_ANT_FEED
50_WIFI_5G_CONN_ANT
STOCKHOLM_ANT

AP DEBUG

PP1V8
DFU_STATUS
FORCE_DFU
PMU_AMUX_AY
PMU_AMUX_BY
PMU_TO_SYSTEM_COLD_RESET_L
I2C0_AP_SCL
I2C0_AP_SDA
I2C1_AP_SCL
I2C1_AP_SDA
BUTTON_HOLD_KEY_L
BUTTON_MENU_KEY_L
BUTTON_RINGER_A
BUTTON_VOL_DOWN_L
BUTTON_VOL_UP_L
PMU_GPIO20
PMU_GPIO21

AP_RESERVED0
AP_RESERVED1
AP_RESERVED2

WLAN

PCIE_AP_TO_WLAN_TX_P
PCIE_AP_TO_WLAN_TX_N

PCIE_WLAN_TO_AP_TX_P
PCIE_WLAN_TO_AP_TX_N

PCIE_AP_TO_WLAN_REFCLK_P
PCIE_AP_TO_WLAN_REFCLK_N

PCIE_AP_TO_WLAN_PERST_L

PCIE_AP_TO_WLAN_DEV_WAKE
PCIE_WLAN_TO_AP_CLKREQ_L

UART4_AP_TO_WLAN_TX
UART4_AP_TO_WLAN_RTS_L
UART4_WLAN_TO_AP_TX
UART4_WLAN_TO_AP_RTS_L

PMU_TO_WLAN_32K_CLK
PMU_TO_WLAN_REG_ON
WLAN_TO_PMU_HOST_WAKE

OWL_TO_WLAN_CONTEXT_A
OWL_TO_WLAN_CONTEXT_B

BLUETOOTH

I2S_AP_TO_BT_LRCK
I2S_AP_TO_BT_BCLK
I2S_AP_TO_BT_DOUT
I2S_BT_TO_AP_DOUT

UART1_AP_TO_BT_TX
UART1_AP_TO_BT_RTS_L
UART1_BT_TO_AP_TX
UART1_BT_TO_AP_RTS_L

PMU_TO_BT_REG_ON
BT_TO_PMU_HOST_WAKE
AP_TO_BT_WAKE

UART3_AP_TO_STOCKHOLM_TXD
UART3_AP_TO_STOCKHOLM_RTS_L
UART3_STOCKHOLM_TO_AP_TXD
UART3_STOCKHOLM_TO_AP_RTS_L

PMU_TO_STOCKHOLM_EN
STOCKHOLM_TO_PMU_HOST_WAKE
AP_TO_STOCKHOLM_DEV_WAKE
AP_TO_STOCKHOLM_FW_DWLD_REQ

Right-side nets

PCIE_AP_TO_WLAN_TXD_P
PCIE_AP_TO_WLAN_TXD_N

PCIE_WLAN_TO_AP_RXD_P
PCIE_WLAN_TO_AP_RXD_N

PCIE_AP_TO_WLAN_REFCLK_P
PCIE_AP_TO_WLAN_REFCLK_N

PCIE_AP_TO_WLAN_RESET_L

PCIE_AP_TO_WLAN_DEV_WAKE
PCIE_WLAN_TO_AP_CLKREQ_L

UART_AP_TO_WLAN_TXD
UART_AP_TO_WLAN_RTS_L
UART_AP_TO_WLAN_RXD
UART_WLAN_TO_AP_CTS_L

PMU_TO_WLAN_CLK32K
PMU_TO_WLAN_REG_ON
WLAN_TO_PMU_HOST_WAKE

OWL_TO_WLAN_CONTEXT_A
OWL_TO_WLAN_CONTEXT_B

I2S_AP_TO_BT_LRCLK
I2S_AP_TO_BT_BCLK
I2S_AP_TO_BT_DOUT
I2S_BT_TO_AP_DIN

UART_AP_TO_BT_TXD
UART_AP_TO_BT_RTS_L
UART_BT_TO_AP_RXD
UART_BT_TO_AP_CTS_L

PMU_TO_BT_REG_ON
BT_TO_PMU_HOST_WAKE
AP_TO_BT_WAKE

UART_AP_TO_STOCKHOLM_TXD
UART_AP_TO_STOCKHOLM_RTS_L
UART_STOCKHOLM_TO_AP_RXD
UART_STOCKHOLM_TO_AP_CTS_L

PMU_TO_STOCKHOLM_EN
STOCKHOLM_TO_PMU_HOST_WAKE
AP_TO_STOCKHOLM_DEV_WAKE
AP_TO_STOCKHOLM_DWLD_REQUEST

MIS-NAMED NET. GPS_TIME_MARK ACTUALLY GOES FROM AP TO BB.

PAGE TITLE: BASEBAND:RADIO SYMBOL

Apple Inc.

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1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

REV	ECN	DESCRIPTION OF REVISION	CK APPD DATE
A	0004536627	PRODUCTION RELEASED	2015-07-21

N71 RADIO_MLB_MIMO - PVT
JULY 07, 2015

ROW/RF2 HB PAD MATCHING BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S1907	1	3.3NH, INDUCTOR	L4105_RF	ROW
152S1990	1	3.0NH, INDUCTOR	L4105_RF	RF2
131S0377	1	1.2PF, CAPACITOR	C4108_RF	RF2
152S2007	1	8.2NH, INDUCTOR	L4401_RF	ROW
131S0426	1	22PF, CAPACITOR	C4405_RF	ROW
152S2001	1	2.4NH, INDUCTOR	C4405_RF	RF2
131S0631	1	0.3PF, CAPACITOR	L4406_RF	RF2
152S2044	1	2.2NH, INDUCTOR	C4406_RF	ROW
152S2021	1	1.5NH, INDUCTOR	C4406_RF	RF2
131S0631	1	0.3PF, CAPACITOR	L4407_RF	RF2
152S2056	1	5.6NH, INDUCTOR	L4403_RF	ROW
131S0429	1	8.2PF, CAPACITOR	C4407_RF	ROW
152S2036	1	2.5NH, INDUCTOR	C4407_RF	RF2
131S0631	1	0.3PF, CAPACITOR	L4408_RF	ROW
152S00143	1	15NH, INDUCTOR	L4404_RF	ROW
131S0823	1	33PF, CAPACITOR	C4408_RF	ROW
152S2051	1	1.3NH, INDUCTOR	C4408_RF	RF2
152S2042	1	1.8NH, INDUCTOR	C4409_RF	RF2
117S0108	1	51 OHM, RESISTOR	L4410_RF	ROW
131S0363	1	0.6PF, CAPACITOR	L4410_RF	RF2
152S00052	1	3.4NH, INDUCTOR	L3910_RF	ROW
152S00026	1	3.5NH, INDUCTOR	L3910_RF	RF2
152S2039	1	3.8NH, INDUCTOR	L3911_RF	ROW
117S0201	1	0 OHM, RESISTOR	L3911_RF	RF2
131S0279	1	1.3PF, CAPACITOR	L3919_RF	ROW
152S2045	1	3.0NH, INDUCTOR	L3919_RF	RF2
152S00052	1	3.4NH, INDUCTOR	L3912_RF	RF2
131S0599	1	1.5PF, CAPACITOR	C3922_RF	RF2
131S0630	1	27PF, CAPACITOR	C3911_RF	RF2

LB PAD

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S00461	1	IC,PWR AMP,LB_PAD,SKWS	ULBPA_RF	ROW
353S00461	1	IC,PWR AMP,LB_PAD,SKWS	ULBPA_RF	RF2
353S00461	1	IC,PWR AMP,LB_PAD,SKWS	ULBPA_RF	RFC
353S00541	1	IC,PWR AMP,LB_PAD,PT	ULBPA_RF	DARWIN

MB PAD

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S4495	1	IC,PWR AMP,MB_PAD	UMBPA_RF	ROW
353S4495	1	IC,PWR AMP,MB_PAD	UMBPA_RF	RF2
353S4495	1	IC,PWR AMP,MB_PAD	UMBPA_RF	RFC
353S00477	1	IC,PWR AMP,MB_PAD, PT	UMBPA_RF	DARWIN

RFC HB PAD MATCHING BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S1907	1	3.3NH, INDUCTOR	L4105_RF	RFC
152S2007	1	8.2NH, INDUCTOR	L4401_RF	RFC
131S0426	1	22PF, CAPACITOR	C4405_RF	RFC
152S2044	1	2.2NH, INDUCTOR	C4406_RF	RFC
131S0631	1	0.3PF, CAPACITOR	L4407_RF	RFC
152S2056	1	5.6NH, INDUCTOR	L4403_RF	RFC
131S0429	1	8.2PF, CAPACITOR	C4407_RF	RFC
152S00143	1	15NH, INDUCTOR	L4404_RF	RFC
131S0823	1	33PF, CAPACITOR	C4408_RF	RFC
117S0108	1	51 OHM, RESISTOR	L4410_RF	RFC
152S00052	1	3.4NH, INDUCTOR	L3910_RF	RFC
152S2039	1	3.8NH, INDUCTOR	L3911_RF	RFC
131S0279	1	1.3PF, CAPACITOR	L3919_RF	RFC

DARWIN HB PAD MATCHING BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
152S1907	1	3.3NH, INDUCTOR	L4105_RF	DARWIN
152S2007	1	8.2NH, INDUCTOR	L4401_RF	DARWIN
131S0426	1	22PF, CAPACITOR	C4405_RF	DARWIN
152S2044	1	2.2NH, INDUCTOR	C4406_RF	DARWIN
131S0631	1	0.3PF, CAPACITOR	L4407_RF	DARWIN
152S2056	1	5.6NH, INDUCTOR	L4403_RF	DARWIN
131S0429	1	8.2PF, CAPACITOR	C4407_RF	DARWIN
152S00143	1	15NH, INDUCTOR	L4404_RF	DARWIN
131S0823	1	33PF, CAPACITOR	C4408_RF	DARWIN
117S0108	1	51 OHM, RESISTOR	L4410_RF	DARWIN
152S00052	1	3.4NH, INDUCTOR	L3910_RF	DARWIN
152S2039	1	3.8NH, INDUCTOR	L3911_RF	DARWIN
131S0279	1	1.3PF, CAPACITOR	L3919_RF	DARWIN

LAT DIPLEXER1

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
155S0971	1	LAT CELL DIPLEXER1,TDK	FLDIP_RF	ROW
155S0971	1	LAT CELL DIPLEXER1,TDK	FLDIP_RF	RF2
155S0971	1	LAT CELL DIPLEXER1,TDK	FLDIP_RF	RFC
155S0971	1	LAT CELL DIPLEXER1,TDK	FLDIP_RF	DARWIN

HB PAD

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
353S00376	1	IC,PWR AMP,HB_PAD,TQS	UHBPA_RF	ROW
353S4494	1	IC,PWR AMP,HB_PAD,AVAGO	UHBPA_RF	RF2
353S00376	1	IC,PWR AMP,HB_PAD,TQS	UHBPA_RF	RFC
353S00478	1	IC,PWR AMP,HB_PAD,PT	UHBPA_RF	DARWIN

19.2MHZ XTAL ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0565	197S0593	ALTERNATE	Y_XO_RF	XTAL, 19.2MHZ
197S0598	197S0593	ALTERNATE	Y_XO_RF	XTAL, 19.2MHZ

VINYL

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
337S00176	1	IC, VINYL	U5101_RF	ROW
337S00176	1	IC, VINYL	U5101_RF	RF2

VINYL RESISTOR

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
117S0161	1	0 OHM, RESISTOR	R3402_RF	RFC
117S0161	1	0 OHM, RESISTOR	R3402_RF	DARWIN

HW_REV1_ID RESISTOR

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	BOM OPTION
118S0646	1	51.1 KOHM, RESISTOR	R3503_RF	DARWIN

SIM ESD DIODE ALTERNATE

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
377S00042	377S0163	ALTERNATE	VR301_RF	ON SEMI ESD DIODE

DRAWING TITLE: SCHEM,SINGLE,BRD,N71
Apple Inc.
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REVISION: A.0.0
BRANCH:
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DIVERSITY LNA

R4901_RF
0
75_RFFE5_SCLK_BB
75_RFFE5_SCLK_BB_UAT
1/20W MF
5% 20%
RADIO_DRX_GPS_LNA

R4902_RF
0
75_RFFE5_SDATA_BB
75_RFFE5_SDATA_BB_UAT
1/20W MF
5% 20%
RADIO_DRX_GPS_LNA

L4903_RF
120NH-5%-40MA
PP_1V8_LDO15
PP_1V8_LDO15_FILT
0201
RADIO_DRX_GPS_LNA
VOLTAGE=1.8V

L4904_RF
120NH-5%-40MA
PP_2V8_LDO14
PP_2V8_LDO14_FILT
0201
RADIO_DRX_GPS_LNA
VOLTAGE=2.8V

L4905_RF
120NH-5%-40MA
PP_2V7_LDO12
PP_2V7_LDO12_FILT
0201
RADIO_DRX_GPS_LNA
VOLTAGE=2.7V

C4905_RF
100PF
5%
16V
NP0-C0G
01005
RADIO_DRX_GPS_LNA

C4902_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_DRX_GPS_LNA

C4903_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_DRX_GPS_LNA

C4904_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_DRX_GPS_LNA

R5204_RF
1.0NH+/-0.1NH-0.580A
50_QUADPL_GPS_OUT
01005
RADIO_DRX_GPS_LNA

C5207_RF
12NH-3%-0.140A
01005
RADIO_DRX_GPS_LNA

C5208_RF
0.2PF
+/-0.1PF
16V
NP0-C0G
01005
NO STUFF

C4901_RF
1.3NH+/-0.1NH-1.1A
50_MB-HB_DRX_LNA_MATCH_IN
50_MB-HB_UAT_DRX_GPS_LNA_IN
0201
RADIO_DRX_GPS_LNA

L4907_RF
7.5NH+/-3%-0.2A
01005
RADIO_DRX_GPS_LNA

U_VOX_RF
LMRX5BJB-G98
LGA
RADIO_DRX_GPS_LNA

VDD_GPS 3
VDD_DRX 12
VIO 9
SDATA 11
SCLK 10

50_GPS_LNA_IN 27 GPS_IN
GPS_OUT 2 50_DRX_GPS_LNA_OUT 15

DRX_ANT 23
DRX_OUT 14 50_MB-HB_UAT_COAX_UPPER 1

GND GND GND GND GND GND GND GND GND GND GND GND GND GND GND GND
THRM_PAD ...

WIFI ANT FEED

TO 5GHZ WIFI ANTENNA FEED

TP_WIFI_5G
TP5102_RF
P2MM-NSM
50_WIFI_5G_CONN_ANT

R5132_RF
0.00
1/20W MF
50_WIFI_5G_CONN_MCH
0201
RADIO_UP_ANT

TP_WIFI_5G_GND
TP5101_RF
P2MM-NSM

C5132_RF
0.2PF
+/-0.05PF
16V
C0G-CERM
0201
NOSTUFF

5GHZ UAT CONNECTOR
J_5G_UAT
J5100_RF
MM8830-2600B
F-RT-SM

R5206_RF
0.8NH+/-0.1NH-0.630A
50_A_0_MATCH_MOD
50_A_0_BPF_MOD
01005

F5203_RF
5.15-5.92GHZ-1DB
LFB185G55CGRD898
50_A_0_ANT
GND

C5211_RF
0.3PF
+/-0.1PF
16V
C0G-CERM
01005

C5212_RF
0.2PF
+/-0.1PF
16V
NP0-C0G
01005
NO STUFF

UAT ANT FEED

UQPL_RF
ACFM-W2T2-AP1
LGA

50_LB_UAT_COAX_UPPER 5 LOW_BAND_CELL
50_MB-HB_DRX_LNA_MATCH_IN 1 MID_BAND_CELL
50_QUADPL_GPS_OUT 14 GNSS
50_G_0_MATCH_MOD 10 WI_FI
ANT 8 50_UAT_NPLEXER_IN
EPAD 19
GND

UAT COAX CONNECTOR
J_UAT_RF
MM8830-2600B
F-RT-SM

C5007_RF
5.0PF
+/-0.1PF
25V
C0G
0201

50_UAT_TEST

50_UPPER_ANT_MCH

L5112_RF
2.7NH-570MA
03015

50_UPPER_ANT

C5122_RF
12PF
5%
25V
CERM
0201

TPUAT_RF
P2MM-NSM
50_UPPER_ANT_FEED

L5100_RF
0.5PF
+/-0.05PF
16V
C0G-CERM
01005

L5410_RF
11NH-3%-0.28OHM-310MA
03015

C5111_RF
1.0PF
+/-0.05PF
25V
C0G-CERM
0201

L5122_RF
24NH-3%-0.16A-0.95OHM
03015

50_UAT_MATCH

C5112_RF
18PF
5%
25V
C0H-CERM
0201

TP_UAT_GND
TP5100_RF
P2MM-NSM

ANT

50_UPPER_ANT_FEED
50_WIFI_5G_CONN_ANT

N71-SPECIFIC RADIO PAGE 3

ANTENNA FEEDS AND CONNECTORS

UAT TUNER

D

J5001_RF
MM6829-2700B
F-ST-SM

50_LB_ASM_ANT2_COAX_LOW

LOWER SIDE

J5003_RF
MM6829-2700B
F-ST-SM

50_LB_UAT_COAX_UPPER

UPPER SIDE

TWO COAX CABLES

J5002_RF
MM6829-2700B
F-ST-SM

50_MB-HB_ASM_ANT2_COAX_LOW

J5004_RF
MM6829-2700B
F-ST-SM

50_MB-HB_UAT_COAX_UPPER

L5408_RF
120NH-5%-40MA
0201

PAC2_VDD_3V0_FILTER

PP3V0_TRISTAR

C5405_RF
33PF
1%
16V
NP0-C0G-CERM
01005

C5403_RF
0.01UF
10%
25V
X5R-CERM
0201

C

FLDIP_RF
LFD21829MMV1D889
LLP
OMIT

50_MB-HB_ASM_ANT1_LAT

50_LB_ASM_ANT1_LAT

50_LAT_DIPLEXER_ANT

C5006_RF
2.2NH+/-0.1NH-0.6A
0201-1

LAT COAX CONNECTOR

J_LAT_RF
MM5829-2700
F-ST-SM1

50_LAT_TEST

L5001_RF
0.4PF
+/-0.05PF
25V
C0G
201

U5411_RF
RF1347
WLCSP
VDD

75_RFFE5_SCLK_BB

R5401_RF
0.00
0%
1/32W
MF
01005

SCLK_FILT

SDAT_FILT

SCLK

SDAT

VIO

L5407_RF
120NH-5%-40MA
0201

RFFE_VIO_S2R

VIO_FILT

C5401_RF
33PF
1%
16V
NP0-C0G-CERM
01005

RF1
RF2
RF3
RF4

C5408_RF
0.01UF
10%
25V
X5R-CERM
0201

C5404_RF
33PF
1%
16V
NP0-C0G-CERM
01005

RFGND GNDA

75_RFFE5_SDATA_BB

R5402_RF
0.00
0%
1/32W
MF
01005

C5402_RF
33PF
1%
16V
NP0-C0G-CERM
01005

L_2AB

L5403_RF
6.8NH-+/-0.2NH-440MA
03015

UAT_MID

C5407_RF
18PF
2%
25V
C0H-CERM
0201

UAT

TP3_RF
A
TP-P80

C5409_RF
0.5PF
+/-0.05PF
25V
C0G-CERM
0201

B

L_1B

L5402_RF
33NH-3%-140MA
03015

L_1A

L5401_RF
33NH-3%-140MA
03015

L5400_RF
12NH-310MA
03015

A

SIM CARD CONNECTOR

PP_UIM1_LDO11

R3004_RF
15.00K
1%
1/32W
MF
01005

C3002_RF
2.2UF
20%
6.3V
X5R-CERM
0201

SIM CARD ESD PROTECTION

VR301_RF
ESDAVLC5-4BU4
SM

SIM1_IO

SIM1_RST

4FF_SIM_SWP

SIM1_CLK

J3001_RF
SIM-W-EJECTOR-THICK-N71
SIM-RT-SM

SIM_DETECT_GND
SIM_DETECT

CLK

RESET

VCC

IO

SWP

GND

SIM1_CLK

SIM1_RST

SIM1_TRAY_DET

SIM1_IO

4FF_SIM_SWP

PP_UIM1_LDO11

DZ301_RF
12V-33PF
01005-1
NOSTUFF

SIM1_TRAY_DET

DZ302_RF
5.5V-6.2PF
0201

PAGE TITLE
FE: ANT CONNECTORS AND UAT TUNER

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WLAN LAT 2.4GHZ BAW BPF

F5201_RF
WLAN-BT-LTE
885118
LGA

L5205_RF
0.4NH+/-0.1NH-320MA
01005

C5203_RF
3.6PF
+/-0.1PF
16V
NP0-C0G
01005

50_G_1_MATCH_MOD

50_G_1_BAW_TX_RX   1   INPUT

OUTPUT   4   50_G_1_BAW_ANT

50_G_1_DPLX

GND

NO STUFF
L5202_RF
12NH-3%-0.140A
01005

L5204_RF
6.8NH-3%-0.210A
01005

L5206_RF
4.0NH-+/-0.1NH-0.27A
01005

PAGE TITLE
WLAN LAT 2.4GHZ BAW BPF

Apple Inc.

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BRANCH

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AP TO BB/WLAN/BT/SH CONNECTIONS

MLB PROBE POINTS

BASEBAND

```
26 25 20 18 17 12 11   PP_VCC_MAIN
                AP_TO_BBPMU_RADIO_ON_L            IN
10              PMU_TO_BBPMU_RESET_L              IN
                AP_TO_BB_RST_L                    IN
9               BB_TO_AP_RESET_DET_L   SINGLE_NODENET   OUT
9 9             BB_TO_AP_GSM_TXBURST_IND          OUT
9 9             AP_TO_BB_MESA_ON_L                IN
9               BB_TO_AP_GPS_TIME_MARK            OUT
9               AP_TO_BB_COREDUMP_TRIG            IN
                AP_TO_BB_IPC_GPIO                 IN
10              TOUCH_TO_BBPMU_FORCE_PWM          IN

9 5             UART0_BB_TO_OWL_TX                OUT
9 5             UART0_OWL_TO_BB_TX                IN

8 5             PCIE0_AP_TO_BB_REFCLK_P           IN
8 5             PCIE0_AP_TO_BB_REFCLK_N           IN

8 5             PCIE0_AP_TO_BB_TX_P               IN
8 5             PCIE0_AP_TO_BB_TX_N               IN

8               PCIE0_BB_TO_AP_TX_P               OUT
8               PCIE0_BB_TO_AP_TX_N               OUT

9 5             PCIE0_AP_TO_BB_PERST_L            IN
9 5             PCIE0_AP_TO_BB_CLKREQ_L           OUT
9 5             PCIE0_BB_TO_PMU_HOST_WAKE_L       OUT
9 5             PCIE0_AP_TO_BB_DEV_WAKE           IN

9 5             I2S_AP_TO_BB_WS                   IN
9 5             I2S_AP_TO_BB_CLK                  IN
9 5             I2S_AP_TO_BB_TX                   IN
9 5             I2S_BB_TO_AP_TX                   OUT

                USB_BB_P                          IN
                USB_BB_N                          IN
                USB_BB_VBUS_DETECT                IN

8 5             SWD_CLK_BB_JTAG_TCK               IN
8 5             SWD_IO_BB_JTAG_TMS                IN

                RFFE_BUFFER_LAT_GPIO1             OUT
9 5 3           75_RFFE5_SDATA_BB                 OUT
9 5 3 2         75_RFFE5_SCLK_BB                  OUT
3               PP3V0_TRISTAR                     IN

11              BB_TO_PMU_AMUX_SMPS1              OUT
11              BB_TO_PMU_AMUX_SMPS3              OUT
11              BB_TO_PMU_AMUX_SMPS4              OUT
11              BB_TO_PMU_AMUX_LDO11_SIM1         OUT
```

AP DEBUG

```
5               PP1V8                             OUT
5               FORCE_DFU                         OUT
                DFU_STATUS                        IN
                PMU_AMUX_AY                       IN
                PMU_AMUX_BY                       IN
                PMU_TO_SYSTEM_COLD_RESET_L        IN
5               I2C0_AP_SDA                       IO
5               I2C0_AP_SCL                       IO
5               I2C1_AP_SDA                       IO
5               I2C1_AP_SCL                       IO
5               BUTTON_HOLD_KEY_L                 OUT
5               BUTTON_MENU_KEY_L                 OUT
5               BUTTON_VOL_DOWN_L                 OUT
5               BUTTON_VOL_UP_L                   OUT
5               BUTTON_RINGER_A                   OUT
                PMU_GPIO20
                PMU_GPIO21

                AP_RESERVED0                      IN
                AP_RESERVED1                      IN
                AP_RESERVED2                      IN
```

POWER

```
5    PP1V8_SDRAM          MAKE_BASE=TRUE     PP_1V8_S2R_VDDIO_WLAN_BT   35
     VOLTAGE=1.8V                            PP_STOCKHOLM_1V8_S2R       26
                                             VOLTAGE=1.8V
                                             RFFE_VIO_S2R               3
                                             VOLTAGE=1.8V
```

WLAN/BT

```
25              PMU_TO_WLAN_32K_CLK               IN
25              PMU_TO_WLAN_REG_ON                IN
                PMU_TO_BT_REG_ON                  IN
                WLAN_TO_PMU_HOST_WAKE             OUT
25              BT_TO_PMU_HOST_WAKE               OUT
25              AP_TO_BT_WAKE                     IN

                UART1_AP_TO_BT_TX                 IN
                UART1_BT_TO_AP_TX                 OUT
                UART1_AP_TO_BT_RTS_L              IN
                UART1_BT_TO_AP_RTS_L              OUT

                I2S_AP_TO_BT_BCLK                 IN
25              I2S_AP_TO_BT_LRCK                 IN
25              I2S_BT_TO_AP_DOUT                 IN
25              I2S_AP_TO_BT_DOUT                 IN

                UART4_AP_TO_WLAN_TX               IN
25              UART4_WLAN_TO_AP_TX               OUT
25              UART4_WLAN_TO_AP_RTS_L            OUT
25              UART4_AP_TO_WLAN_RTS_L            IN

25              PCIE_WLAN_TO_AP_CLKREQ_L          OUT
25              PCIE_AP_TO_WLAN_PERST_L           IN
25              PCIE_AP_TO_WLAN_DEV_WAKE          IN
25              PCIE_AP_TO_WLAN_TX_P              IN
25              PCIE_AP_TO_WLAN_TX_N              IN
25              PCIE_AP_TO_WLAN_REFCLK_P          IN
25              PCIE_AP_TO_WLAN_REFCLK_N          IN
25              PCIE_WLAN_TO_AP_TX_P              OUT
25              PCIE_WLAN_TO_AP_TX_N              OUT

25              OWL_TO_WLAN_CONTEXT_A             IN
25              OWL_TO_WLAN_CONTEXT_B             IN
```

STOCKHOLM

```
24  PP1V8_SDRAM                                   IN
    AP_TO_STOCKHOLM_SIM_SEL
    STOCKHOLM_TO_PMU_HOST_WAKE
26  AP_TO_STOCKHOLM_FW_DWLD_REQ                   OUT
26  PMU_TO_STOCKHOLM_EN                           IN
    AP_TO_STOCKHOLM_DEV_WAKE                      IN
26 5  UART3_AP_TO_STOCKHOLM_TXD                   IN
26 5  UART3_STOCKHOLM_TO_AP_TXD                   OUT
26 5  UART3_AP_TO_STOCKHOLM_RTS_L                 IN
26 5  UART3_STOCKHOLM_TO_AP_RTS_L                 OUT
```

ANT

```
26              STOCKHOLM_ANT                     IN
```

PCIE

```
PP3073_RF
P2MM-NSM
          1   PCIE0_AP_TO_BB_PERST_L   5 9
     OMIT

PP3074_RF
P2MM-NSM
          1   PCIE0_BB_TO_PMU_HOST_WAKE_L   5 9
     OMIT        RADIO_DEBUG

PP3075_RF
P2MM-NSM
          1   PCIE0_AP_TO_BB_CLKREQ_L   5 9
     OMIT

PP3076_RF
P2MM-NSM
          1   PCIE0_AP_TO_BB_DEV_WAKE   5 9
     OMIT        RADIO_DEBUG

PP3080_RF
P2MM-NSM
          1   PCIE0_AP_TO_BB_REFCLK_P   5 8
     OMIT        RADIO_DEBUG

PP3081_RF
P2MM-NSM
          1   PCIE0_AP_TO_BB_REFCLK_N   5 8
     OMIT        RADIO_DEBUG

PP3084_RF
P2MM-NSM
          1   PCIE0_AP_TO_BB_TX_P   5 8
     OMIT        RADIO_DEBUG

PP3085_RF
P2MM-NSM
          1   PCIE0_AP_TO_BB_TX_N   5 8
     OMIT        RADIO_DEBUG

PP3090_RF
P2MM-NSM
          1   BB_JTAG_SRST_L
     OMIT        RADIO_DEBUG

PP3091_RF
P2MM-NSM
          1   SWD_IO_BB_JTAG_TMS
     OMIT        RADIO_DEBUG
```

PMU

```
PP3032_RF
P2MM-NSM
          1   PMIC_RESOUT_L   8 10
     OMIT

PP3033_RF
P2MM-NSM
          1   50_SLEEP_CLK_32K   8 10
     OMIT

PP3034_RF
P2MM-NSM
          1   XO_OUT_D0_EN   8 10
     OMIT

PP3036_RF
P2MM-NSM
          1   SPMI_CLK   8 10
     OMIT        RADIO_DEBUG

PP3037_RF
P2MM-NSM
          1   SPMI_DATA   8 10
     OMIT        RADIO_DEBUG
```

BASEBAND

```
PP3017_RF
P2MM-NSM
          1   BB_DEBUG_ERROR   9
     OMIT

PP3018_RF
P2MM-NSM
          1   50_MDM_PCIE_CLK   8 10
     OMIT

PP3019_RF
P2MM-NSM
          1   50_BBPMU_TO_STOCKHOLM_19P2M_CLK   10 26
     OMIT

PP3006_RF
P2MM-NSM
          1   STOCKHOLM_TO_BBPMU_CLK_REQ   10 26
     OMIT
```

```
PP3008_RF
P2MM-NSM
          1   I2S_AP_TO_BB_WS   5 9
     OMIT        RADIO_DEBUG

PP3009_RF
P2MM-NSM
          1   I2S_AP_TO_BB_CLK   5 9
     OMIT        RADIO_DEBUG

PP3010_RF
P2MM-NSM
          1   I2S_AP_TO_BB_TX   5 9
     OMIT        RADIO_DEBUG

PP3011_RF
P2MM-NSM
          1   I2S_BB_TO_AP_TX   5 9
     OMIT        RADIO_DEBUG

PP3012_RF
P2MM-NSM
          1   AP_TO_BB_MESA_ON_L   5 9
     OMIT        RADIO_DEBUG

PP3013_RF
P2MM-NSM
          1   BB_TO_AP_GSM_TXBURST_IND   5 9
     OMIT        RADIO_DEBUG

PP3014_RF
P2MM-NSM
          1   BB_TO_AP_GPS_TIME_MARK   5 9
     OMIT        RADIO_DEBUG

PP3016_RF
P2MM-NSM
          1   UART0_BB_TO_OWL_TX   5 9
     OMIT        RADIO_DEBUG

PP3020_RF
P2MM-NSM
          1   UART0_OWL_TO_BB_TX   5 9
     OMIT        RADIO_DEBUG
```

ANT TUNER

```
PP3001_RF
P2MM-NSM
          1   75_RFFE5_SDATA_BB   2 3 5 9
     OMIT   RADIO_DEBUG

PP3002_RF
P2MM-NSM
          1   75_RFFE5_SCLK_BB   2 3 5 9
     OMIT   RADIO_DEBUG
```

RFFE

```
PP3056_RF
P2MM-NSM
          1   75_RFFE1_SDATA_BB   9 16
     OMIT   RADIO_DEBUG

PP3077_RF
P2MM-NSM
          1   75_RFFE4_SDATA_BB   9 12
     OMIT   RADIO_DEBUG

PP3051_RF
P2MM-NSM
          1   75_RFFE5_SCLK_BB_BUFFER   9
     OMIT

PP3052_RF
P2MM-NSM
          1   75_RFFE5_SDATA_BB_BUFFER   9
     OMIT

PP3053_RF
P2MM-NSM
          1   75_RFFE2_SDATA_BB   9 17 18 19 20 21 22
     OMIT   RADIO_DEBUG

PP3054_RF
P2MM-NSM
          1   75_RFFE3_SDATA_BB   9 23
```

STOCKHOLM

```
PP3062_RF
P2MM-NSM
          1   STOCKHOLM_DWPM_DBG   26
     OMIT

PP3063_RF
P2MM-NSM
          1   STOCKHOLM_DWPS_DBG   26
     OMIT

PP3064_RF
P2MM-NSM
          1   UART3_AP_TO_STOCKHOLM_TXD   5 26
     OMIT

PP3065_RF
P2MM-NSM
          1   UART3_STOCKHOLM_TO_AP_TXD   5 26
     OMIT

PP3066_RF
P2MM-NSM
          1   UART3_AP_TO_STOCKHOLM_RTS_L   5 26
     OMIT

PP3067_RF
P2MM-NSM
          1   UART3_STOCKHOLM_TO_AP_RTS_L   5 26
     OMIT
```

DEBUG CONNECTOR

```
NOSTUFF
J3000_RF
AXE550124
F-ST-SM
        51          53
        1
        3    O O   2
        5    O O   4
        7    O O   6
        9    O O   8
            O O   10
11          O O   12   SIM1_CLK        3 9
13          O O   14   SIM1_RST        3 9
15   UART_WLAN_TO_BB_COEX_TX   O O   16   SIM1_IO   3 9
17   I2C0_AP_SDA         O O   18   PP_UIM1_LDO11   7 11
5    I2C0_AP_SCL         O O   20   SIM1_TRAY_DET   3 9
21   BUTTON_VOL_DOWN_L   O O   22   4FF_SIM_SWP   3 24 26
23   BUTTON_VOL_UP_L     O O   24   I2C1_AP_SDA   5
25   BUTTON_RINGER_A     O O   26   I2C1_AP_SCL   5
24 9 SIM2_RESET          O O   28   BUTTON_HOLD_KEY_L   5
24   SIM2_DATA           O O   30   BUTTON_MENU_KEY_L   5
25 9 UART_BB_TO_WLAN_COEX_TX   O O   32   PP1V8   5
     SIM2_DETECT         O O   34   FORCE_DFU   5
24   SIM2_DATA_R         O O   36   SIM2_CLK   9 24
                         O O   38   PP_UIM2_LDO13   7 11 24
        39          O O   40
        41          O O   42
        43          O O   44
        45          O O   46
        47          O O   48
        49          O O   50
        52          54
```

ESD CAPS

```
10   PMU_TO_BBPMU_RESET_L
     SIM2_RESET
     C5101_RF        C3503_RF
     100PF           100PF
     16V             16V
     NP0-C0G         NP0-C0G
     01005           01005
```

BASEBAND: POWER 1

U_BB_RF
MDM9635M
BGA
SYM 6 OF 8

PWR1
RADIO_BB

PP_0V9_LDO3

PP_1V0_SMPS3

PP_0V9_SMPS1

U_BB_RF
MDM9635M
BGA
SYM 8 OF 8

GND
RADIO_BB

(MSM CORE)

PP_0V9_LDO3

C3101_RF	C3104_RF	C3107_RF	C3110_RF	C3113_RF	C3116_RF	C3120_RF	C3123_RF	C3125_RF
2.2UF	2.2UF	2.2UF	2.2UF	2.2UF	2.2UF			
20%	20%	20%	20% 20%	20%	20%			6.3V
4V	4V	4V	4V	4V	4V	4V	4V	XSR
XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	0402-1
0201	0201	0201	0201	0201	0201	0201	0201	
RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB

(MSM MODEM)

PP_0V9_SMPS1

C3102_RF	C3105_RF	C3108_RF	C3111_RF	C3114_RF	C3117_RF	C3119_RF	C3122_RF
2.2UF	2.2UF	2.2UF	2.2UF	2.2UF	2.2UF	2.2UF	2.2UF
20%	20%	20%	20%	20%	20%	20%	20%
4V	4V	4V	4V	4V	4V	4V	4V
XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM
0201	0201	0201	0201	0201	0201	0201	0201
RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB

(MODEM SUB MEMORY)

PP_1V0_SMPS3

C3103_RF	C3106_RF	C3109_RF	C3112_RF	C3115_RF	C3118_RF	C3121_RF	C3124_RF
2.2UF	2.2UF	2.2UF	2.2UF	2.2UF	2.2UF	2.2UF	2.2UF
20%	20%	20%	20%	20%	20%	20%	20%
4V	4V	4V	4V	4V	4V	4V	4V
XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM	XSR-CERM
0201	0201	0201	0201	0201	0201	0201	0201
RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB	RADIO_BB

BASEBAND: POWER 2

U_BB_RF
MDM9635M
BGA
SYM 7 OF 8
PWR2
RADIO_BB

PP_1V2_LDO2

Pin	Signal
F23	VDD_P1
F24	VDD_P1
K23	VDD_P1
K24	VDD_P1
P23	VDD_P1
P24	VDD_P1
W2	VDD_P1
V23	VDD_P1
V24	VDD_P1
V1	VDD_P1
G1	VDD_P2
C22	VDD_P3
D3	VDD_P3
J1	VDD_P3
J20	VDD_P3
M1	VDD_P3
M20	VDD_P3
T1	VDD_P3
T24	VDD_P3
AA5	VDD_P3
AA15	VDD_P3
AA23	VDD_P3
AA19	VDD_P4
AA17	VDD_P5
U23	VDD_P6
U13	VDD_USB_CORE
Y12	VDD_USB_1P8
W15	VDD_USB_3P3
W7	VDD_USB_SS_0P9
U7	VDD_USB_SS_1P8
W8	VDD_PCIE_0P9
U9	VDD_PCIE_1P8

Pin	Signal
C1	VDD_DDR_CORE_1P8
D24	VDD_DDR_CORE_1P8
Y24	VDD_DDR_CORE_1P8
AA2	VDD_DDR_CORE_1P8
B1	VDD_DDR_CORE_1P2
E23	VDD_DDR_CORE_1P2
W23	VDD_DDR_CORE_1P2
Y1	VDD_DDR_CORE_1P2
G2	VREF_SDC
U18	VREF_UIM
C10	VDD_A3
E19	VDD_A3
B11	VDD_A2
B9	VDD_A2
B7	VDD_A2
B5	VDD_A2
B13	VDD_A2
E12	VDD_A2
B20	VDD_A2
B16	VDD_A2
F12	VDD_A1
U16	VDD_ALWAYS_ON NC
N20	VDD_PLL
E9	VDD_PLL
H20	VDD_QFPROM_PRG

PP_1V8_LDO6
PP_1V2_LDO2
VDDPX_BIAS_UIM2
PP_1V0_SMPS3
PP_1V7_LDO5
PP_1V5_LDO1
PP_1V8_LDO7
PP_1V8_LDO7

PP_1V8_LDO6
PP_1V8_LDO6
PP_UIM1_LDO11
PP_UIM2_LDO13
PP_1V2_LDO2
PP_1V0_SMPS3
PP_1V8_LDO8
PP_3V075_LDO10
PP_0V95_LDO4

C3204_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC
C3207_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC
C3210_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC
C3214_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC
C3218_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC

C3202_RF 2.2UF 20% 4V X5R-CERM 0201 RADIO_PMIC
C3205_RF 2.2UF 20% 4V X5R-CERM 0201 RADIO_PMIC
C3208_RF 2.2UF 20% 4V X5R-CERM 0201 RADIO_PMIC
C3211_RF 2.2UF 20% 4V X5R-CERM 0201 RADIO_PMIC

C3220_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC
C3226_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC
C3225_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC
C3219_RF 0.1UF 20% 6.3V X5R-CERM 01005 RADIO_PMIC
C3223_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC PLACE CLOSE TO B1
C3229_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC

C3227_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC

C3209_RF 2.2UF 20% 4V X5R-CERM 0201 RADIO_PMIC
C3206_RF 2.2UF 20% 4V X5R-CERM 0201 RADIO_PMIC
C3203_RF 2.2UF 20% 4V X5R-CERM 0201 RADIO_PMIC
C3212_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC
C3213_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC
C3215_RF 2.2UF 20% 4V X5R-CERM 0201 RADIO_PMIC
C3216_RF 2.2UF 20% 6.3V X5R-CERM 0201 RADIO_PMIC

BASEBAND: CONTROL AND INTERFACES

U_BB_RF
MDM9635M
BGA
SYM 1 OF 8

CONTROL
RADIO_BB

50_SLEEP_CLK_32K	W20	SLEEP_CLK
XO_OUT_D0_EN	U20	CXO_EN
50_MDM_19P2M_CLK	E3	CXO
BB_JTAG_SRST_L	K3	SRST*
PMIC_RESOUT_L	G22	RESIN*
NC L3		MODE_0
NC L5		MODE_1
SWD_CLK_BB_JTAG_TCK_BUFFER	J2	TCK
NC K5		TRST*
SWD_IO_BB_JTAG_TMS	J3	TMS
NC K1		TDI
NC K2		TDO

HSIC_STROBE U22 NC
HSIC_DATA T23 NC
HSIC_CAL V22 → BB_HSIC_CAL
RESOUT* H22 NC
PS_HOLD AA16 → PS_HOLD
SDC1_CLK H2 NC
SDC1_CMD F2 NC
SDC1_DATA_0 G5 NC
SDC1_DATA_1 F3 NC
SDC1_DATA_2 G3 NC
SDC1_DATA_3 H3 NC
PMIC_SPMI_CLK Y21 → SPMI_CLK
PMIC_SPMI_DATA Y20 → SPMI_DATA

R3303_RF
240
1%
1/32W
MF
01005
RADIO_BB
PLACE
CLOSE
TO V22

PP_1V8_LDO6

NOSTUFF AT PVT

U3301_RF
74AUP1G34GX
SOT1226

SWD_CLK_BB_JTAG_TCK   2   4   SWD_CLK_BB_JTAG_TCK_BUFFER
NOSTUFF
NC

U_BB_RF
MDM9635M
BGA
SYM 2 OF 8

ANALOG_RF
RADIO_BB

50_PRX_CA2_I	A10	BBRX_IP_CH0
NC B10		BBRX_IM_CH0
50_PRX_CA2_Q	C8	BBRX_QP_CH0
NC C9		BBRX_QM_CH0
50_DRX_CA2_I	E7	BBRX_IP_CH1
NC E6		BBRX_IM_CH1
50_DRX_CA2_Q	B8	BBRX_QP_CH1
NC A8		BBRX_QM_CH1
50_DRX_CA1_I	C7	BBRX_IP_CH2
NC C6		BBRX_IM_CH2
50_DRX_CA1_Q	A6	BBRX_QP_CH2
NC B6		BBRX_QM_CH2
50_PRX_CA1_I	A4	BBRX_IP_CH3
NC B4		BBRX_IM_CH3
50_PRX_CA1_Q	C4	BBRX_QP_CH3
NC C5		BBRX_QM_CH3
VREF_DAC_BIAS	C20	TX_DAC0_VREF
	C15	TX_DAC1_VREF

BBRX_IP_FB B12 → 50_TX_FB_RX_I
BBRX_IM_FB A12 NC
BBRX_QP_FB C13 → 50_TX_FB_RX_Q
BBRX_QM_FB C12 NC
GNSS_BB_IP E10 → 50_GPS_RX_I
GNSS_BB_IM E11 NC
GNSS_BB_QP E13 → 50_GPS_RX_Q
GNSS_BB_QM E14 NC
TX_DAC0_IP C19 → TX_I_P
TX_DAC0_IM C18 → TX_I_N
TX_DAC0_QP A19 → TX_Q_P
TX_DAC0_QM B19 → TX_Q_N AA7
TX_DAC1_IP C16 NC
TX_DAC1_IM C17 NC
TX_DAC1_QP A15 NC
TX_DAC1_QM B15 NC
ET_DAC0_P A21 → ET_DAC_P
ET_DAC0_M B21 → ET_DAC_N
ET_DAC1_P A1 NC
ET_DAC1_M B1 NC
DNC M22 NC
DNC N22 NC
DNC AA23 NC
DNC AA22 NC
DNC Y8 NC
DNC W13 NC

C3301_RF
2200PF
10%
16V
X5R_CERM
01005
RADIO_BB

U_BB_RF
MDM9635M
BGA
SYM 4 OF 8

MEMORY
RADIO_BB

BDM_CAL E1 BDM_ZQ
EBI1_CAL T3 EBI1_CAL
MDM_VREF_LPDDR2 M24 VREF_DQ_BDM
  V2 EBI1_VREF
  T20 EBI1_VREF
  P20 EBI1_VREF

R3305_RF
240
1%
1/32W
MF
01005
RADIO_BB
PLACE
CLOSE
TO E1

R3306_RF
240
1%
1/32W
MF
01005
RADIO_BB
PLACE
CLOSE
TO T3

C3302_RF
1UF
20%
X5R
0201
RADIO_BB

U_BB_RF
MDM9635M
BGA
SYM 5 OF 8

USB_PCIE
RADIO_BB

50_MDM_PCIE_CLK W12 PCIE_USB_SYSCLK
  U12 USB_HS_REXT
USB_BB_P U14 USB_HS_DP
USB_BB_N W14 USB_HS_DM
NC Y7 USB_SS_TX_P
NC   USB_SS_TX_M
NC Y9 USB_SS_RX_P
NC A9 USB_SS_RX_M
SS_CAL_RES U8 USB_SS_REXT

PCIE_EP_REFCLK_P U10 → PCIE0_AP_TO_BB_REFCLK_P
PCIE_EP_REFCLK_N W10 → PCIE0_AP_TO_BB_REFCLK_N
PCIE_TX_P AA11 → PCIE0_BB_TO_AP_TX_P
PCIE_TX_M Y11 → PCIE0_BB_TO_AP_TX_N
PCIE_RX_P AA13 → PCIE0_AP_TO_BB_TX_P
PCIE_RX_M Y13 → PCIE0_AP_TO_BB_TX_N
PCIE_REXT AA10 PCIE_CAL_RES

R3304_RF
200
1%
1/32W
MF
01005
RADIO_BB
PLACE
CLOSE
TO U12

R3301_RF
1.43K
1%
1/32W
MF
01005
RADIO_BB
PLACE
CLOSE
TO U8

R3302_RF
1.43K
1%
1/32W
MF
01005
RADIO_BB
PLACE
CLOSE
TO AA10

USB_BB_TRXTUNE

PAGE TITLE: CELLULAR BASEBAND: CONTROL AND INTERFACES

Apple Inc.

DRAWING NUMBER: 051-1902   SIZE: D
REVISION: A.0.0

BRANCH

PAGE: 33 OF 51
SHEET: 41 OF 59

BASEBAND: GPIOS

U_BB_RF
MDM9635M
BGA
SYM 3 OF 8

GPIO
RADIO_BB

Left side GPIO signals:

Pin	Signal	GPIO
Y17	SIM2_DATA	GPIO_0
Y16	SIM2_DETECT	GPIO_1
W16	SIM2_RESET	GPIO_2
W17	SIM2_CLK	GPIO_3
K22	NC	GPIO_4
K23	NC	GPIO_5
K20	NC	GPIO_6
K23	NC	GPIO_7
W6	UART0_BB_TO_OWL_TX	GPIO_8
Y5	UART0_OWL_TO_BB_TX	GPIO_9
W5	NC	GPIO_10
AA4	NC	GPIO_11
AA22	I2S_AP_TO_BB_WS	GPIO_12
Y23	I2S_AP_TO_BB_TX	GPIO_13
W21	I2S_BB_TO_AP_TX	GPIO_14
Y22	I2S_AP_TO_BB_CLK	GPIO_15
K23	NC	GPIO_16
K23	NC	GPIO_17
K22	NC	GPIO_18
K22	NC	GPIO_19
K24	NC	GPIO_20
K23	NC	GPIO_21
J23	BB_EEPROM_I2C_SDA	GPIO_22
J22	BB_EEPROM_I2C_SCL	GPIO_23
K22	NC	GPIO_24
Y4	NC	GPIO_25
P5	NC	GPIO_26
P3	NC	GPIO_27
P2	NC	GPIO_28
P1	NC	GPIO_29
N5	NC	GPIO_30
N3	NC	GPIO_31
N2	FAST_BOOT_SELECT0	GPIO_32
N1	FAST_BOOT_SELECT1	GPIO_33
M5	NC	GPIO_34
M3	BB_TO_AP_GSM_TXBURST_IND	GPIO_35
M2	NC	GPIO_36
L2	NC	GPIO_37
D2	NC	GPIO_38
C2	NC	GPIO_39

Right side GPIO signals:

Pin	Signal	GPIO
D1	BB_TO_AP_GPS_TIME_MARK	GPIO_40
F22	50_GSM_TX_PHASE	GPIO_41
G20	NC	GPIO_42
G23	NC	GPIO_43
C23	75_RFFE3_SDATA_BB	GPIO_44
C24	75_RFFE3_SCLK_BB	GPIO_45
D22	75_RFFE4_SDATA_BB	GPIO_46
D23	75_RFFE4_SCLK_BB	GPIO_47
E22	75_RFFE5_SDATA_BB_BUFFER	GPIO_48
F20	75_RFFE5_SCLK_BB_BUFFER	GPIO_49
E2	NC	GPIO_50
W4	NC	GPIO_51
R5	UART_BB_TO_WLAN_COEX_TX	GPIO_52
R2	UART_WLAN_TO_BB_COEX_TX	GPIO_53
W3	PCIE0_AP_TO_BB_DEV_WAKE	GPIO_54
T5	BB_TO_AP_RESET_DET_L	GPIO_55
A2	AP_TO_BB_COREDUMP_TRIG	GPIO_56
B2	BB_DEBUG_ERROR	GPIO_57
U3	NC	GPIO_58
R3	AP_TO_BB_IPC_GPIO	GPIO_59
T3	NC	GPIO_60
Y2	PCIE0_BB_TO_PMU_HOST_WAKE_L	GPIO_61
AA3	NC	GPIO_62
U2	NC	GPIO_63
K20	PCIE0_AP_TO_BB_CLKREQ_L	GPIO_64
U6	PCIE0_AP_TO_BB_PERST_L	GPIO_65
U5	AP_TO_BB_MESA_ON_L	GPIO_66
Y3	NC	GPIO_67
U1	NC	GPIO_68
U17	SIM1_REMOVAL_ALARM	GPIO_69
V3	NC	GPIO_70
W2	RF_SOC2BB_I2S_MCLK	GPIO_71
E20	75_RFFE2_SDATA_BB	GPIO_72
A23	75_RFFE2_SCLK_BB	GPIO_73
B23	75_RFFE1_SDATA_BB	GPIO_74
B24	75_RFFE1_SCLK_BB	GPIO_75
Y19	SIM1_IO	GPIO_76
W19	SIM1_TRAY_DET	GPIO_77
Y18	SIM1_RST	GPIO_78
W18	SIM1_CLK	GPIO_79

STUFF R3411 FOR PCIE BOOT (UNFUSED BB)
STUFF R3412 FOR USB BOOT (UNFUSED BB)

PP_1V8_LDO6

R3412_RF
10K
1%
1/32W
MF
01005
RADIO_BB
NOSTUFF

R3411_RF
10K
1%
1/32W
MF
01005
RADIO_BB
NOSTUFF

FAST_BOOT_SELECT0
FAST_BOOT_SELECT1

OPTION SEL2 SEL1 SEL0
GPIO   35   34   32
PCIE   0   0   1
HSUSB   0   1   0
HSIC   0   1   1

BUFFER ON RFFE5
SCLK/SDATA_A IS OUTPUT

UBUFR_RF
RF1361
WLCSP

Pin	Signal
4	VIO
2	SCLK
3	SDATA
1	GPO1 — RFFE_BUFFER_LAT_GPIO1
8	GPO2 — NC
5	SCLK_A
6	SDATA_A
7	GND

PP_1V8_LDO15

75_RFFE5_SCLK_BB_BUFFER
75_RFFE5_SDATA_BB_BUFFER

R3414_RF
0.00
75_SCLK_A → 75_RFFE5_SCLK_BB
1/32W
MF
01005
RADIO_BB

R3413_RF
0.00
75_SDATA_A → 75_RFFE5_SDATA_BB
1/32W
MF
01005
RADIO_BB

C3407_RF
51PF
5%
16V
NPO-C0G
01005
RADIO_BB

C3405_RF
51PF
5%
16V
NPO-C0G
01005
RADIO_BB

PLACE C3405_RF CLOSE TO BUFFER
PLACE C3407_RF CLOSE TO MDM

RFFE CLOCK FILTERS

R3407_RF
0.00
75_RFFE1_SCLK_BB → 75_RFFE1_SCLK_FILT
0%
MF
01005
RADIO_BB

C3401_RF
10PF
5%
16V
CERM
01005
NOSTUFF
RADIO_BB

R3408_RF
0.00
75_RFFE2_SCLK_BB → 75_RFFE2_SCLK_FILT
0%
MF
01005
RADIO_BB

C3402_RF
10PF
5%
16V
CERM
01005
NOSTUFF
RADIO_BB

R3409_RF
0.00
75_RFFE3_SCLK_BB → 75_RFFE3_SCLK_FILT
0%
MF
01005
RADIO_BB

C3403_RF
10PF
5%
16V
CERM
01005
NOSTUFF
RADIO_BB

R3410_RF
0.00
75_RFFE4_SCLK_BB → 75_RFFE4_SCLK_FILT
0%
MF
01005
RADIO_BB

C3404_RF
10PF
5%
16V
CERM
01005
NOSTUFF
RADIO_BB

PCIE PULL-UPS TO BB RAIL

NOSTUFF R3402 WHEN VINYL PRESENT
STUFF R3402 WHEN VINYL NOT PRESENT

SIM2_DETECT

PP_1V8_LDO6

R3401_RF
10K
1%
1/32W
MF
01005
RADIO_BB

R3402_RF
0.00
0%
1/32W
MF
01005
RADIO_BB
OMIT

SIM1_TRAY_DET

PP_1V8_LDO6

R3406_RF
100K
1%
1/32W
MF
01005
RADIO_BB

PCIE0_AP_TO_BB_CLKREQ_L

BB EEPROM

PP_1V8_LDO6

R3403_RF
10K
1%
1/32W
MF
01005
RADIO_BB

C3406_RF
1UF
20%
10V
X5R
0201
RADIO_BB

R3404_RF
10K
1%
1/32W
MF
01005
RADIO_BB

UEPRM_RF
CAT24C08C4A
WLCSP

VCC   A1
SCL   B1   RADIO_BB   SDA   B2
BB_EEPROM_I2C_SCL
BB_EEPROM_I2C_SDA
VSS   A2

RFFE USAGE TABLE

RFFE1 WTR
RFFE2 LB/MB/HB PAD, 2G PA, LB/MB/HB ASM
RFFE3 DIV ASM
RFFE4 QPOET
RFFE5 DIV LNA, ANT TUNERS

PAGE TITLE	CELLULAR BASEBAND: GPIOS	
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	REVISION A.0.0	

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PMU: CONTROL AND CLOCKS

RESET AND CONTROL: PMU

HW_REV2_ID	R3502	R3503	CONFIG
1.80V	698K	–	MLB
0.12V	698K	51.1K	SELF GEN

HW_REV_ID	R3504	R3505	REVISION
0.10V	887K	51.1K	DEV1
0.30V	255K	51.1K	DEV2
0.50V	124K	51.1K	DEV3
0.70V	82.5K	51.1K	DEV4/PROTOMLB1
0.90V	51.1K	51.1K	PROTOMLB2
1.10V	31.6K	51.1K	DEV5/PROTO1
1.20V	50K	100K	PROTO2
1.31V	39K	105K	EVT
1.43V	13.3K	51.1K	EVT_ALT
1.55V	8.25K	51.1K	CARRIER BUILD
1.67V	3.92K	51.1K	DVT
1.80V	10K	–	PVT

U_PMU_RF
PMD9635
WLNSP
SYM 1 OF 5
CONTROL
RADIO_PMIC

R3501_RF 1.00K 1% MF 1/32W 01005 RADIO_PMIC

R3507_RF 20.0K 5% MF 1/32W 01005 RADIO_PMIC

AP TO BB RST L
PS HOLD
AP TO BBPMU RADIO ON L
PMU TO BBPMU RESET L
PMIC RESOUT L
PS HOLD PMIC
SPMI_CLK
SPMI_DATA

58 CBL_PWR*
75 PON_1
43 RESIN*
63 PON_RST*
82 PS_HOLD
25 SPMI_CLK
31 SPMI_DATA

OPT_1 52 NC
OPT_2 42 NC
GND 98
BAT_ID_THERM 53
GND 67

U_PMU_RF
PMD9635
WLNSP
SYM 5 OF 5

36 GND
46 GND
57 GND
62 GND

MPPS AND GPIOS: PMU

PP_1V8_LDO7

REV_ID
PVT

R3502_RF 698K 1% MF 1/32W 01005 RADIO_PMIC

R3504_RF 10K 1% MF 1/32W 01005 RADIO_PMIC

R3503_RF 51.1K 1% MF 1/32W 01005 RADIO_PMIC OMIT

R3505_RF 51.1K 1% MF 1/32W 01005 RADIO_PMIC NOSTUFF

U_PMU_RF
PMD9635
WLNSP
SYM 3 OF 5
GPIO MPP
RADIO_PMIC

HW_REV1_ID
VDDPX_BIAS_UIM2
HW_REV2_ID
VREF_DAC_BIAS

13 MPP_01 NC
51 MPP_02
61 MPP_03
9 MPP_04
4 MPP_05
20 MPP_06
83 PA_THERM1 NC
88 PA_THERM2 NC

GPIO_01 26 NC
GPIO_02 15 STOCKHOLM_TO_BBPMU_CLK_REQ
GPIO_03 21 NC
GPIO_04 37 USB BB VBUS DETECT
GPIO_05 32 SIM1_REMOVAL_ALARM
GPIO_06 38 TOUCH_TO_BBPMU_FORCE_PWM

NOSTUFF
R3508_RF 100K 1% MF 1/32W 01005 RADIO_PMIC

XTAL AND CLOCK: PMU

PP_1V8_LDO7

C3501_RF 0.1UF 20% 6.3V X5R-CERM 01005 RADIO_PMIC

R3506_RF 100K 1% MF 1/32W 01005

Y_XO_RF
19.2MHZ-10PPM-7PF-80OHM
2.0X1.6-SM

XTAL_19P2M_OUT
XO_THERM
XTAL_19P2M_IN

RADIO_PMIC

C3502_RF 1000PF 10% 10V X5R 01005 RADIO_PMIC

XW3501_RF
SHORT-10L-0.1MM-SM
OMIT
PLACE AT U2_RF.41

U_PMU_RF
PMD9635
WLNSP
SYM 2 OF 5
CLOCK
RADIO_PMIC

XO_OUT_D0_EN
XO_THERM
XO_ADC_GND
XTAL_19P2M_IN
XTAL_19P2M_OUT

56 BB_CLK_EN
76 XO_THERM
41 GND_XOADC
55 XTAL_19M_IN
65 XTAL_19M_OUT
71 GND_XO_CLK

LN_BB_CLK 45
BB_CLK 35 50_MDM_19P2M_CLK_PMU
RF_CLK1 66 50_WTR_19P2M_CLK
RF_CLK2 77 50_BBPMU_TO_STOCKHOLM_19P2M_CLK
SLEEP_CLK 72 50_SLEEP_CLK_32K

R3509_RF 0.00 50_MDM_PCIE_CLK
50_MDM_19P2M_CLK

R3509_RF 0.00 1% MF 1/32W 01005 RADIO_PMIC

GND_XO_CLK: VIA DOWN TO GND PLANE

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CELLULAR PMU: CONTROL AND CLOCKS

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PMU: SWITCHERS AND LDOS

SWITCHERS BULK CAPS

U_PMU_RF
PMD9635
WLNSP
SYM 4 OF 5
POWER

L3601_RF 1UH-20%-0.054OHM-3.4A RADIO_PMIC
L3602_RF 2.2UH-20%-0.14OHM-1.6A RADIO_PMIC
L3603_RF 1.0UH-20%-2.7A-0.056OHM RADIO_PMIC
L3604_RF 2.2UH-20%-0.14OHM-1.6A RADIO_PMIC
L3605_RF 2.2UH-20%-0.14OHM-1.6A RADIO_PMIC

PP_VSW_S1 VOLTAGE=0.9V
PP_VSW_S2 VOLTAGE=1.225V
PP_VSW_S3 VOLTAGE=1.0V
PP_VSW_S4 VOLTAGE=1.85V
PP_VSW_S5 VOLTAGE=1.0V

MDM MODEM 3400MA VOLTAGE=0.9V PP_0V9_SMPS1 TCXO SHUTDOWN: ON
LOW VOLTAGE LDOS 587MA PP_1V225_SMPS2 VOLTAGE=1.225V TCXO SHUTDOWN: ON
MDM MEMORY, MDM USB 2234MA PP_1V0_SMPS3 VOLTAGE=1.0V TCXO SHUTDOWN: ON
HIGH VOLTAGE LDOS 653MA PP_1V85_SMPS4 VOLTAGE=1.85V TCXO SHUTDOWN: ON
LDO9->WTR 700MA PP_1V0_SMPS5 VOLTAGE=1.0V TCXO SHUTDOWN: OFF

VOLTAGE	DESCRIPTION	TCXO	RAIL
1.5V	MDM LOW VOLTAGE ANALOG	ON	PP_1V5_LDO1
1.2V	MDM EBI1, DDR CORE	ON	PP_1V2_LDO2
0.9V	MDM PCIE	ON	PP_0V9_LDO3
0.95V	MDM PCIE	OFF	PP_0V95_LDO4
1.7V	MDM HIGH VOLTAGE ANALOG	ON	PP_1V7_LDO5
1.8V	MDM 1.8V I/O, DDR, SHARED 1.8V VOLTAGE RAIL	ON	PP_1V8_LDO6
1.8V	MDM PLL	OFF	PP_1V8_LDO7
1.8V	MDM LOW VOLTAGE USB	ON	PP_1V8_LDO8
1.0V	WTR	ON	PP_1V0_LDO9
3.075V	MDM HIGH VOLTAGE USB	OFF	PP_3V075_LDO10
1.8V	UIM1	OFF	PP_UIM1_LDO11
2.7V	GPS LNA	ON	PP_2V7_LDO12
1.8V	UIM2	OFF	PP_UIM2_LDO13
2.8V	FRONT END SUPPLY	OFF	PP_2V8_LDO14
1.8V	RFFE VIO	OFF	PP_1V8_LDO15

PLACE XW CLOSE TO PMU
VIA XW DOWN TO THE GND PLANE

BB_TO_PMU_AMUX_SMPS1
BB_TO_PMU_AMUX_SMPS3
BB_TO_PMU_AMUX_SMPS4
BB_TO_PMU_AMUX_LDO11_SIM1

PMU: ET MODULATOR

STAR ROUTING

PP_VCC_MAIN

CAN BE DELETED IF NEARBY
BULK CAPACITANCE IS
AVAIALBLE TO BE SHARED

C3701_RF
10UF
20%
6.3V
CERM-X5R
0402-9
RADIO_QPOET

L3702_RF
FERR-22-OHM-1A-0.055OHM
0201
RADIO_QPOET

PP_QPOET_BYP_BATT   VOLTAGE=4.3V
PP_QPOET_VCC_PA   VOLTAGE=4.3V

C3702_RF
10UF
20%
6.3V
CERM-X5R
0402-9
RADIO_QPOET

VOLTAGE=0.0V

XW3701_RF
SHORT-10L-0.25MM-SM
OMIT
PLACE AT U_QPOET_RF.27

L3701_RF
2.2UH-20%-0.3A-0.38OHM
0603
RADIO_QPOET

PP_VBATT_PA_BOOST   VOLTAGE=4.3V

GND_AMP

ET_DAC_P
ET_DAC_N
75_RFFE4_SDATA_BB
75_RFFE4_SCLK_FILT

NC

U_QPT_RF
QFE1100
BGA
RADIO_QPOET

14 BYP_BATT
10 BYP_LOAD
28 VDD_BUCK
27 GND_BUCK
7   AMP_INP
2   AMP_INM
26 SDATA
21 SCLK
13 MPP1
20 VSW_BOOST
19 USID_LSB
22 GND
24 GND_BOOST

VDD_BATT   15
VDD_BATT   16
VDD_AMP   5
VDD_1P8   17
VSW_BUCK   23
AMP_OUT   4
C_BUCK   11
C_BUCK   12
C_SW_BUCK 8
C_SW_BUCK 9
C_GSM   6   NC
PA_VBAT   18 NC
VOUT_BOOST 25
GND   1
           3

L3704_RF
FERR-22-OHM-1A-0.055OHM
0201
RADIO_QPOET

PP_QPOET_VDD_CLASS_AB_AMP
VOLTAGE=4.0V

PP_QPOET_VDD_BOOST_OUT
VOLTAGE=4.0V

C3705_RF
22UF
20%
X5R-CERM
0603-1
RADIO_QPOET
GROUND CLOSE TO U4_RF.3

L3705_RF
120-OHM-210MA
01005
RADIO_QPOET

PP_1V8_QPOET_VDD   PP_1V8_LDO15
VOLTAGE=1.8V

C3706_RF
10UF
20%
6.3V
CERM-X5R
0402-9
RADIO_QPOET

L3703_RF
1.5UH-20%-2.2A-0.11OHM
LQE2M-SM
RADIO_QPOET

PP_QPOET_VSW
VOLTAGE=4.0V

PP_QPOET_VCC_PA
VOLTAGE=4.3V

PP_QPOET_APT_CAP_SWITCH_IN
VOLTAGE=4.0V

C3707_RF
4.7UF
20%
6.3V
X5R-CERM1
402
RADIO_QPOET

C3708_RF
470PF
10%
X7R
01005
RADIO_QPOET
QPOET_CLASS_AB_AMP_SNUBBER
PLACE RC SNUBBER CLOSE TO U_QPOET_RF.4

R3703_RF
2.2
5%
1/32W
RF
01005
RADIO_QPOET
GROUND RESISTOR CLOSE TO U_QPOET_RF.3

C3704_RF
10UF
20%
10V
X5R-CERM
0402-8
RADIO_QPOET

VOLTAGE=0.0V
PP_QPOET_BOOST_GND

PP_QPOET_VDD_BOOST_OUT

ROUTE CAP GROUND BACK TO U_QPOET_RF.24

XW3702_RF
SHORT-10L-0.25MM-SM
OMIT
PLACE AT U_POET_RF.24

Title Block

PAGE TITLE
CELLULAR PMU: ET MODULATOR

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TRANSCEIVER: POWER

STAR ROUTING

PP_1V0_LDO9

R3801_RF
0
5%
1/20W
MR
0201
RADIO_TRANSCEIVER

R3802_RF
0
5%
1/20W
MR
0201
RADIO_TRANSCEIVER

XW3801_RF
SHORT-10L-0.1MM-SM
OMIT

XW3802_RF
SHORT-10L-0.1MM-SM
OMIT

XW3803_RF
SHORT-10L-0.1MM-SM
OMIT

PP_VDD_RF1_TX_VCO
VOLTAGE=1.0V   35MA

PP_VDD_RF1_TX
VOLTAGE=1.0V   175MA

PP_VDD_RF1_DIG
VOLTAGE=1.0V   25MA

PP_VDD_RF1_RX1
VOLTAGE=1.0V   40MA

PP_VDD_RF1_RX2
VOLTAGE=1.0V   70MA

C3815_RF
4.7UF
20%
6.3V
CER-X5R
0402
RADIO_TRANSCEIVER

C3801_RF
4.7UF
20%
6.3V
CER-X5R
0402
RADIO_TRANSCEIVER

C3802_RF
0.1UF
10%
6.3V
CERM-X5R
0201
RADIO_TRANSCEIVER

C3803_RF
0.1UF
10%
6.3V
CERM-X5R
0201
RADIO_TRANSCEIVER

C3804_RF
0.1UF
10%
6.3V
CERM-X5R
0201
RADIO_TRANSCEIVER

C3805_RF
0.1UF
10%
6.3V
CERM-X5R
0201
RADIO_TRANSCEIVER

C3806_RF
0.1UF
10%
6.3V
CERM-X5R
0201
RADIO_TRANSCEIVER

C3809_RF
27PF
5%
25V
COG
0201
RADIO_TRANSCEIVER
NOSTUFF

C3810_RF
27PF
5%
25V
COG
0201
RADIO_TRANSCEIVER
NOSTUFF

C3811_RF
27PF
5%
25V
COG
0201
RADIO_TRANSCEIVER
NOSTUFF

C3812_RF
27PF
5%
25V
COG
0201
RADIO_TRANSCEIVER
NOSTUFF

C3813_RF
27PF
5%
25V
COG
0201
RADIO_TRANSCEIVER
NOSTUFF

U_WTR_RF
WTR3925
WLPSP
SYM 4 OF 5
PWR
RADIO_TRANSCEIVER

88 VDD_RF1_TVCO
67 VDD_RF1_TSIG
45 VDD_RF1_DIG
64 VDD_RF1_RX1
49 VDD_RF1_RX2

VDD_RF2_LDO 23
VDD_RF2 30

VDD_RF2_LDO_BYPASS

C3807_RF
1UF
20%
10V
X5R
0201
RADIO_TRANSCEIVER

345MA

C3808_RF
0.47UF
20%
4V
CERM-X5R-1
20%
RADIO_TRANSCEIVER

C3814_RF
4700PF
10%
6.3V
X5R
01005
RADIO_TRANSCEIVER

PP_1V85_SMPS4

U_WTR_RF
WTR3925
WLPSP
SYM 5 OF 5
GND
RADIO_TRANSCEIVER

3	GND	GND	94
58	GND	GND	87
56	GND	GND	81
42	GND	GND	17
72	GND	GND	52
28	GND	GND	37
84	GND	GND	36
21	GND	GND	61
91	GND	GND	53
20	GND	GND	54
90	GND	GND	57
19	GND	GND	82
89	GND	GND	83
102	GND	GND	26
55	GND	GND	27
		GND	71
		GND	63
		GND	41
		GND	48
		GND	38
		GND	25
		GND	31

DC BLOCKING CAP VALUES CANNOT BE MORE THAN 33PF

50_PRX_LB1_B8_GSM900_PAD

L3901_RF
15NH+/-3%-0.25A-0.7OHM
0201
RADIO_TRANSCEIVER
50_PRX_LB1_B8_GSM900_MATCH

L3922_RF
3.0PF
+/-0.1PF
16V
NP0-C0G
01005
RADIO_TRANSCEIVER
NOSTUFF

C3901_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_PRX_LB1_B8_GSM900

50_PRX_LB2_B12_B17_B13_B28_PAD

L3902_RF
15NH+/-3%-0.25A-0.7OHM
0201
RADIO_TRANSCEIVER
NOSTUFF
50_PRX_LB2_B12_B17_B13_B28_MATCH

C3913_RF
2.0PF
+/-0.1PF
16V
NP0-C0G
01005
RADIO_TRANSCEIVER

C3902_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_PRX_LB2_B12_B17_B13_B28

50_PRX_LB3_B20_B26_B27_GSM850_PAD

L3903_RF
15NH+/-3%-0.25A-0.7OHM
0201
RADIO_TRANSCEIVER
NOSTUFF
50_PRX_LB3_B20_B26_B27_GSM850_MATCH

C3914_RF
22NH-3%-0.12A-3.2OHM
01005
RADIO_TRANSCEIVER
NOSTUFF

C3903_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_PRX_LB3_B20_B26_B27_GSM850

50_PRX_LB4_B29_PAD

L3904_RF
22NH-3%-0.25A
0201
RADIO_TRANSCEIVER
50_PRX_LB4_B29_MATCH

C3915_RF
2.0PF
+/-0.1PF
16V
NP0-C0G
01005
RADIO_TRANSCEIVER

C3904_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_PRX_LB4_B29

C3905_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_PRX_MB1_B4CA_PAD
50_PRX_MB1_B4CA_MATCH

L3905_RF
4.7NH-3%-0.270A
01005
RADIO_TRANSCEIVER
50_PRX_MB1_B4CA

C3916_RF
2.2PF
+/-0.1PF
16V
NP0-C0G
01005-1
RADIO_TRANSCEIVER

50_PRX_MB2_B1_B4_PAD

L3906_RF
4.3NH+/-3%-0.5A
0201
RADIO_TRANSCEIVER
50_PRX_MB2_B1_B4_MATCH

C3917_RF
1.9PF
+/-0.1PF
16V
NP0-C0G
01005
RADIO_TRANSCEIVER

C3906_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_PRX_MB2_B1_B4

50_PRX_MB3_B3_GSM1800_PAD

C3907_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_PRX_MB3_B3_GSM1800_MATCH

C3918_RF
2.2PF
+/-0.1PF
16V
NP0-C0G
01005-1
RADIO_TRANSCEIVER

L3907_RF
6.2NH-3%-0.4A
0201
RADIO_TRANSCEIVER
50_PRX_MB3_B3_GSM1800

50_PRX_MB5_B25_GSM1900_PAD

C3912_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_PRX_MB5_B25_GSM1900_MATCH

C3919_RF
2.2PF
+/-0.1PF
16V
NP0-C0G
01005-1
RADIO_TRANSCEIVER

L3908_RF
5.1NH-3%-0.4A
0201
RADIO_TRANSCEIVER
50_PRX_MB5_B25_GSM1900

50_PRX_MLB6_B34_B39_B2CA_PAD

L3909_RF
4.3NH+/-3%-0.5A
0201
RADIO_TRANSCEIVER
50_PRX_MLB6_B34_B39_B2CA_MATCH

C3920_RF
2.0PF
+/-0.1PF
16V
NP0-C0G
01005
RADIO_TRANSCEIVER

C3908_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_PRX_MLB6_B34_B39_B2CA

50_PRX_HB1_B7_PAD

L3910_RF
3.4NH-+/-0.1NH-0.5A-0.17OHM
0201
RADIO_TRANSCEIVER
OMIT
50_PRX_HB1_B7_MATCH

C3921_RF
1.5PF
+/-0.1PF
16V
NP0-C0G
01005
RADIO_TRANSCEIVER

C3909_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_PRX_HB1_B7

50_PRX_HB3_B38_B40_B41_PAD

L3911_RF
3.8NH+/-0.1NH-0.5A
0201
RADIO_TRANSCEIVER
OMIT
50_PRX_HB3_B38_B40_B41_MATCH

L3919_RF
1.3PF
+/-0.1PF
25V
C0G-CERM
0201
RADIO_TRANSCEIVER
OMIT

C3910_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_PRX_HB3_B38_B40_B41

50_PRX_HB4_B30_PAD

L3912_RF
4.2NH-+/-0.1NH-0.5A-0.17OHM
0201
RADIO_TRANSCEIVER
OMIT
50_PRX_HB4_B30_MATCH

C3922_RF
1.3PF
+/-0.1PF
16V
NP0-C0G
01005
RADIO_TRANSCEIVER
OMIT

C3911_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
OMIT
50_PRX_HB4_B30

U_WTR_RF
WTR3925
WLPSP
SYM 1 OF 5
PRX
RADIO_TRANSCEIVER

Pin	Signal		Pin	Signal
104	PRX_LB1	PRX_CA1_IP	69	50_PRX_CA1_I
96	PRX_LB2	PRX_CA1_QP	77	50_PRX_CA1_Q
103	PRX_LB3			
95	PRX_LB4			
99	PRX_MB1	PRX_CA2_IP	39	50_PRX_CA2_I
92	PRX_MB2	PRX_CA2_QP	33	50_PRX_CA2_Q
106	PRX_MB3			
98	PRX_MB4			
105	PRX_MB5			
97	PRX_MLB6 NC			
73	PRX_HB1			
65	PRX_HB2 NC			
85	PRX_HB3			
79	PRX_HB4			

50_PRX_MLB6_B34_B39_B2CA IS ASSIGNED TO MB4

Apple Inc.

PAGE TITLE
CELLULAR TRANSCEIVER: PRX PORTS

DRAWING NUMBER
051-1902
SIZE D

REVISION
A.0.0

BRANCH

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TRANSCEIVER: DRX/GPS PORTS

DRX MODULE PORTS ARE DC BLOCKED

U_WTR_RF
WTR3925
WLPSP
SYM 2 OF 5
DRX_GPS
RADIO_TRANSCEIVER

Pin	Net	Signal
5	50_DRX_LB1_B27_B29	DRX_LB1
12	50_DRX_LB2_B26_B13_B17_B12	DRX_LB2
4	50_DRX_LB3_B28	DRX_LB3
11	50_DRX_LB4_B8_B20	DRX_LB4
15	50_DRX_MB1_B1	DRX_MB1
22	NC	DRX_MB2
7	50_DRX_MB3_B4	DRX_MB3
14	50_DRX_MB4_B34_B39	DRX_MB4
6	50_DRX_MB5_B25	DRX_MB5
13	50_DRX_MLB6_B3	DRX_MLB6
43	NC	DRX_HB1
50	50_DRX_HB2_B7_B41C	DRX_HB2
29	50_DRX_HB3_B40_B41A	DRX_HB3
35	50_DRX_HB4_B30_B38_B41B	DRX_HB4
2	NC	GNSS_L2_IN
10	50_GPS_RX	GNSS_L1_IN

Signal	Pin	Net
DRX_CA1_IP	78	50_DRX_CA1_I
DRX_CA1_QP	70	50_DRX_CA1_Q
DRX_CA2_IP	34	50_DRX_CA2_I
DRX_CA2_QP	40	50_DRX_CA2_Q
GNSS_BB_IP	18	50_GPS_RX_I
GNSS_BB_QP	32	50_GPS_RX_Q
GPDATA	24	50_GSM_TX_PHASE

C4000_RF
22PF
5%
16V
CERM
01005

PLACE CAP CLOSE TO MDM GPIO14
IMPROVES RXBN BY 4DB

GPS FILTER

PLACE NEAR U_WTR

2 50_DRX_GPS_LNA_OUT

FLGPS_RF
GPS-COMPASS-GNSS
B8846
LGA
RADIO_GPS

1 INPUT_UNBAL   OUTPUT_UNBAL 4   50_GPS_FILTER_OUT

GND GND GND
2 3 5

C4906_RF
1,6PF
+/-0.1PF
16V
NP0-C0G
01005

L4908_RF
10NH-3%-0.170A
01005

50_GPS_RX

PAGE TITLE
CELLULAR TRANSCEIVER: DRX/GPS PORTS

Apple Inc.

DRAWING NUMBER 051-1902 SIZE D
REVISION A.0.0
BRANCH
PAGE 40 OF 51
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TRANSCEIVER: TX PORTS

50_TX_LB3_B12_B17_B13_B28

C4110_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_TX_VLB_PA_IN_MATCH

C4112_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_TX_LB4_B27_B26_B20_B8 — 50_TX_LB_PA_IN_MATCH

U_WTR_RF
WTR3925
WLPSP
SYM 3 OF 5
TX
RADIO_TRANSCEIVER

Left pins		Right pins	
TX_BB_IP	76	TX_LB1 66	50_TX_LB1_LB_GSM
TX_BB_IM	75	TX_LB2 59 NC	
TX_BB_QP	68	TX_LB3 51	50_TX_LB3_B12_B17_B13_B28
TX_BB_QM	60	TX_LB4 44	50_TX_LB4_B27_B26_B20_B8
TX_FB_IP	9	TX_HMB1 101	50_TX_MB1_B1_B25_B34_B39
TX_FB_QP	1	TX_HMB2 100	50_TX_HMB2_B38_B40_B41
RFFE_CLK	47	TX_HMB3 93	50_TX_HMB3_B3_B4
RFFE_DATA	62	TX_HMB4 86	50_TX_HMB4_B30_B7
		TX_HMLB1 80 NC	
		TX_HMLB2 74	50_TX_HMLB2_MB_GSM
XO_IN	46	TX_FBRX_P 8	TX_FB_RX_IN_P
		TX_FBRX_M 16	TX_FB_RX_IN_N

TX_I_P
TX_I_N
TX_Q_P
TX_Q_N
50_TX_FB_RX_I
50_TX_FB_RX_Q
75_RFFE1_SCLK_FILT
75_RFFE1_SDATA_BB

50_WTR_19P2M_CLK — 50_WTR_19P2M_WTR_IN

C4101_RF
100PF
5%
16V
NP0-C0G
01005
RADIO_TRANSCEIVER

C4114_RF
1.0PF
+/-0.1PF
16V
NP0-C0G
01005
NOSTUFF

PIN TX_HMB1 CANNOT BE ALLOCATED TO A HB DUE TO VCO PROXIMITY ON CHIP

RADIO_TRANSCEIVER
FLFBR_RF
DPX202690DT-0029B1SJ
0805

	COM 3	HI 6	50_MB-HB_COUPLER_DIPLEXER_IN
	COM 4	LO 1	50_LB_COUPLER_DIPLEXER_IN
		GND 5	

B12/13 TX INTERSTAGE FILTER REMOVED

C4104_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_TX_LB1_LB_GSM — 50_TX_LB1_LB_GSM_MATCH

R4101_RF
0.00
0%
1/32W
MF
01005
RADIO_TRANSCEIVER
50_TX_LB1_LB_GSM_PA_IN

L4101_RF
10NH-3%-140MA
01005
NOSTUFF
RADIO_TRANSCEIVER

C4105_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_TX_MB1_B1_B25_B34_B39 — 50_TX_MB1_B1_B25_B34_B39_PA_IN

L4103_RF
1.2NH+/-0.1NH-0.550A
01005
RADIO_TRANSCEIVER
50_TX_HMB2_B38_B40_B41 — 50_TX_HMB2_B38_B40_B41_PA_IN

C4106_RF
1.4PF
+/-0.1PF
16V
NP0-C0G
01005
RADIO_TRANSCEIVER

C4107_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_TX_HMB3_B3_B4 — 50_TX_HMB3_B3_B4_MATCH

R4104_RF
0.00
0%
1/32W
MF
01005
RADIO_TRANSCEIVER
50_TX_HMB3_B3_B4_PA_IN

L4104_RF
10NH-3%-140MA
01005
NOSTUFF
RADIO_TRANSCEIVER

L4105_RF
3.3NH+/-0.1NH-290MA
01005
RADIO_TRANSCEIVER
OMIT
50_TX_HMB4_B30_B7 — 50_TX_HMB4_B30_B7_MATCH

R4105_RF
0.00
0%
1/32W
MF
01005
RADIO_TRANSCEIVER
50_TX_HMB4_B30_B7_PA_IN

C4108_RF
1.2PF
+/-0.1PF
16V
NP0-C0G
01005-1
RADIO_TRANSCEIVER
OMIT

C4109_RF
27PF
2%
16V
CERM
01005
RADIO_TRANSCEIVER
50_TX_HMLB2_MB_GSM — 50_TX_HMLB2_MB_GSM_MATCH

R4106_RF
0.00
0%
1/32W
MF
01005
RADIO_TRANSCEIVER
50_TX_HMLB2_MB_GSM_PA_IN

L4106_RF
10NH-3%-140MA
01005
RADIO_TRANSCEIVER
NOSTUFF

LOW BAND PA+DUPLEXERS

75_RFFE2_SCLK_FILT

75_RFFE2_SDATA_BB

PP_1V8_LDO15

PP_QPOET_VCC_PA

PP_VCC_MAIN

L4221_RF
120-OHM-210MA
01005
RADIO_LB_PAD

L4222_RF
120-OHM-210MA
01005
RADIO_LB_PAD

L4224_RF
120-OHM-210MA
01005
RADIO_LB_PAD

L4223_RF
120-OHM-210MA
01005
RADIO_LB_PAD

75_RFFE2_SCLK_LBPAD

75_RFFE2_SDATA_LBPAD

PP_1V8LBPAD_VIO
VOLTAGE=1.8V

PP_VBATT_PA_LB_HB
VOLTAGE=4.3V

C4201_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_LB_PAD

C4202_RF
47PF
5%
16V
CERM
01005
RADIO_LB_PAD

C4203_RF
47PF
5%
16V
CERM
01005
RADIO_LB_PAD

C4214_RF
47PF
5%
16V
CERM
01005
RADIO_LB_PAD

C4205_RF
5.6NH+/-3%-0.4A
0201
RADIO_LB_PAD

L4203_RF
1.5PF
+/-0.1PF
25V
C0G-CERM
0201
RADIO_LB_PAD

L4212_RF
2.7PF
+/-0.1PF
25V
C0G-CERM
0201
RADIO_LB_PAD
NOSTUFF

C4206_RF
4.2NH-+/-0.1NH-0.5A-0.17OHM
0201
RADIO_LB_PAD

L4204_RF
0.3PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_LB_PAD

L4213_RF
39NH-5%-120MA
0201
RADIO_LB_PAD
NOSTUFF

C4207_RF
4.1NH+/-0.1NH-0.5A-0.17OHM
0201
RADIO_LB_PAD

L4205_RF
0.7PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_LB_PAD

L4214_RF
39NH-5%-120MA
0201
RADIO_LB_PAD
NOSTUFF

C4208_RF
3.0NH+/-0.1NH-0.6A
0201
RADIO_LB_PAD

L4206_RF
0.5PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_LB_PAD

L4215_RF
27NH-3%-0.140A-2.3OHM
0201
RADIO_LB_PAD
NOSTUFF

C4209_RF
3.0NH+/-0.1NH-0.6A
0201
RADIO_LB_PAD

L4207_RF
0.5PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_LB_PAD

L4216_RF
0.9PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_LB_PAD
NOSTUFF

50_PAD_ANT_B12   50_LB_ASM_IN_B12
50_PAD_ANT_B28B_B29   50_LB_ASM_IN_B28B_B29
50_PAD_ANT_B28A   50_LB_ASM_IN_B28A
50_PAD_ANT_B13   50_LB_ASM_IN_B13
50_PAD_ANT_B27   50_LB_ASM_IN_B27

R4201_RF
0.00
1%
1/20W
MF
0201
RADIO_LB_PAD

R4202_RF
0.00
1%
1/20W
MF
0201
RADIO_LB_PAD

50_TX_VLB_PA_IN_MATCH   50_TX_VLB_PA_IN

50_TX_LB_PA_IN_MATCH   50_TX_LB_PA_IN

L4201_RF
10NH-3%-250MA
0201
NOSTUFF
RADIO_LB_PAD

L4202_RF
10NH-3%-250MA
0201
RADIO_LB_PAD
NOSTUFF

NC

ULBPA_RF
SKY77812
LGA
RADIO_LB_PAD
OMIT

RFIN VLB
RFIN LB

VBATT   VCC1   VCC2   VIO   SDATA   SCLK

RX B8
RX LB
RX VLB
RX B29

ANT B12/B17   16
ANT B28B/B29   18
ANT B28A   20
ANT B13   23
ANT B27   25
ANT B26   29
ANT B20   31
ANT B8   33

GND   EPAD

50_PRX_LB1_B8_GSM900_PAD
50_PRX_LB3_B20_B26_B27_GSM850_PAD
50_PRX_LB2_B12_B17_B13_B28_PAD
50_PRX_LB4_B29_PAD

50_PAD_ANT_B26

C4211_RF
4.2NH-+/-0.1NH-0.5A-0.17OHM
0201
RADIO_LB_PAD

L4209_RF
1.0PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_LB_PAD

L4218_RF
0.5PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_LB_PAD
NOSTUFF

C4212_RF
2.2NH+/-0.1NH-0.6A
0201-1
RADIO_LB_PAD

L4210_RF
0.5PF
+/-0.05PF
16V
C0G-CERM
01005
RADIO_LB_PAD
NOSTUFF

L4219_RF
0.5PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_LB_PAD
NOSTUFF

C4213_RF
1.5NH+/-0.1NH-1.0A
0201
RADIO_LB_PAD

L4211_RF
2.0PF
+/-0.1PF
25V
C0G-CERM
0201
RADIO_LB_PAD
NOSTUFF

L4220_RF
10NH-3%-250MA
0201
25V
RADIO_LB_PAD
NOSTUFF

50_LB_ASM_IN_B26
50_PAD_ANT_B20   50_LB_ASM_IN_B20
50_PAD_ANT_B8   50_LB_ASM_IN_B8

MID BAND PA+DUPLEXERS

75_RFFE2_SCLK_FILT
22 21 20 19 17 9 **IN**

75_RFFE2_SDATA_BB
22 21 20 19 17 9 **BI**

23 22 21 20 19 17 12 11 9 2 **IN** PP_1V8_LDO15

L4307_RF
120-OHM-210MA
1   2
01005
RADIO_MB_PAD

PP_1V8_LDO15_MB_PAD
VOLTAGE=1.8V

19 17 12 **IN** PP_QPOET_VCC_PA

26 25 20 17 12 11 5 **IN** PP_VCC_MAIN

C4301_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_MB_PAD

C4302_RF
100PF
5%
16V
NP0-C0G
01005
RADIO_MB_PAD

C4303_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_MB_PAD

C4309_RF
47PF
5%
16V
CERM
01005
RADIO_MB_PAD

C4308_RF
12PF
5%
16V
CERM
01005
RADIO_MB_PAD

R4301_RF
3.00
1%
1/32W
MF
01005
RADIO_MB_PAD

PP_VCC1_MB_PA
VOLTAGE=4.0V

UMBPA_RF
AFEM-8030-AP1
LGA
RADIO_MB_PAD
OMIT

VBATT 8
VCC1 40
VCC2 39
VIO 11
SDATA 9
SCLK 10

16 **IN** 50_TX_HMB3_B3_B4_PA_IN — 3 RFIN_B3/B4
16 **IN** 50_TX_MB1_B1_B25_B34_B39_PA_IN — 5 RFIN_B1/B25/B34/B39

14 **OUT** 50_PRX_MLB6_MB34_B39_B2CA_PAD — 17 RX_B34/B39/B2CA
14 **OUT** 50_PRX_MB5_B25_GSM1900_PAD — 19 RX_B25
14 **OUT** 50_PRX_MB1_B4CA_PAD — 21 RX_B4CA
14 **OUT** 50_PRX_MB3_B3_GSM1800_PAD — 27 RX_B3
14 **OUT** 50_PRX_MB2_B1_B4_PAD — 31 RX_B1/B4

ANT_B1/B3/B4 35
ANT_B25/B4CA 25
ANT_B34/B39 15

GND
1 3 5 7 12 13 14 16 18 20 22 23 24 26 28 29 30 32 33 34 36 37 38

EPAD
41 42 43 44 45 46 47 48 49 50 51 52 53 54 55

C4305_RF
1.9NH-+/-0.1NH-0.6A-0.12OHM
1   2
0201
RADIO_MB_PAD

50_PAD_ANT_B1_B3_B4   50_MB-HB_ASM_IN_B1_B3_B4 **BI** 22

L4301_RF
0.3PF
+/-0.05PF
25V
C0G-CERM
RADIO_MB_PAD

L4304_RF
0.5PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_MB_PAD
NOSTUFF

C4306_RF
3.0NH+/-0.1NH-0.6A
1   2
0201
RADIO_MB_PAD

50_PAD_ANT_B25_B4CA   50_MB-HB_ASM_IN_B25_B4CA **BI** 22

L4302_RF
0.8PF
+/-0.05PF
16V
C0G-CERM
01005
RADIO_MB_PAD

L4305_RF
10NH-3%-0.14A-2.1OHM
01005
RADIO_MB_PAD
NOSTUFF

C4307_RF
2.2NH+/-0.1NH-0.6A
1   2
0201-1
RADIO_MB_PAD

50_PAD_ANT_B34_B39   50_MB-HB_ASM_IN_B34_B39 **BI** 22

L4303_RF
0.2PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_MB_PAD

L4306_RF
0.7PF
+/-0.05PF
16V
NP0-C0G
01005
RADIO_MB_PAD
NOSTUFF

HIGH BAND PA+DUPLEXERS

75_RFFE2_SCLK_FILT
75_RFFE2_SDATA_BB

PP_1V8_LDO15
PP_QPOET_VCC_PA
PP_VBATT_PA_LB_HB

HB PAD VBATT DECOUPLING CAPS ARE SHARED WITH LB PAD
AT C4201_RF AND C4202_RF.

C4403_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_HB_PAD

C4410_RF
5.0PF
+/-0.1PF
16V
NP0-C0G
01005
RADIO_HB_PAD

C4405_RF
22PF
5%
6.3V
NP0-C0G
0201
RADIO_HB_PAD
OMIT

L4401_RF
8.2NH-3%-0.3A
0201
RADIO_HB_PAD
OMIT

L4406_RF
0.5PF
+/-0.05PF
25V
NP0-C0G
0201
RADIO_HB_PAD
OMIT

C4406_RF
2.2NH+/-0.1NH-0.6A
0201-1
RADIO_HB_PAD
OMIT

L4407_RF
0.3PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_HB_PAD
OMIT

UHBPA_RF
HB-PAD
LGA
RADIO_HB_PAD
OMIT

50_TX_HMB4_B30_B7_PA_IN
50_TX_HMB2_B38_B40_B41_PA_IN

50_PRX_HB3_B38_B40_B41_PAD
50_PRX_HB1_B7_PAD
50_PRX_HB4_B30_PAD

32 RFIN_B7/B30
30 RFIN_B38/B40/B41

28 RX_B38/B40/B41
9   RX_B7
40 RX_B30

26 VBATT
34 VCC1
35 VCC2
23 VIO
25 SDATA
24 SCLK

ANT_B40A/B41A 20
ANT_B40B/B41C 14
ANT_B38/B41B   11
ANT_B7   6
ANT_B30   3

C4407_RF
8.2PF
+/-0.1PF
25V
CER
0201
RADIO_HB_PAD
OMIT

L4408_RF
0.2PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_HB_PAD
OMIT

L4403_RF
5.6NH+/-3%-0.4A
0201
RADIO_HB_PAD
OMIT

C4408_RF
33PF
2%
25V
NP0-C0G
0201
RADIO_HB_PAD
OMIT

L4404_RF
8.2NH-3%-0.3A
0201
RADIO_HB_PAD
OMIT

C4409_RF
33PF
2%
25V
NP0-C0G
0201
RADIO_HB_PAD
OMIT

L4405_RF
10NH-3%-0.3A
0201
RADIO_HB_PAD
NOSTUFF

L4410_RF
51
5%
1/20W
MF
0201
RADIO_HB_PAD
OMIT

GND
EPAD

50_PAD_ANT_B40A_B41A
50_PAD_ANT_B40B_B41C
50_PAD_ANT_B38_B41B
50_PAD_ANT_B7
50_PAD_ANT_B30

50_MB-HB_ASM_IN_B40A_B41A
50_MB-HB_ASM_IN_B40B_B41C
50_MB-HB_ASM_IN_B38_B41B
50_MB-HB_ASM_IN_B7
50_MB-HB_ASM_IN_B30

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2G PA

PP_VCC_MAIN

26 25 20 18 17 12 11 5 IN PP_VCC_MAIN

XW4500_RF
SM
1 2 PP_VCC_MAIN_2G_PA

26 25 20 18 17 12 11 5 IN PP_VCC_MAIN

R4501_RF
0
1 2 PP_VBATT_PA_FILT
5%
1/20W
MR
0201
RADIO_2G_PA

C4501_RF
56PF
5%
25V
NP0-C0G-CERM
01005
RADIO_2G_PA

C4503_RF
1UF
20%
16V
X5R
0201
RADIO_2G_PA

C4506_RF
0.1UF
20%
6.3V
X5R
0201
RADIO_2G_PA

C4505_RF
15UF
20%
6.3V
X5R
0402-1
RADIO_2G_PA

C4510_RF
1UF
20%
16V
X5R
0201
RADIO_2G_PA

U2GPA_RF
SKY77357
LGA
RADIO_2G_PA

VBATT   VCC
8   3

7 LBRFIN   LBRFOUT 1
12 HBRFIN   HBRFOUT 6
11 VIO
9 SDATA
10 SCLK

GND   EPAD
2 4 5 13

50_TX_LB1_LB_GSM_PA_IN   IN
50_TX_HMLB2_MB_GSM_PA_IN IN

23 22 21 19 18 17 12 11 9 2 IN PP_1V8_LDO15
75_RFFE2_SDATA_BB IN
75_RFFE2_SCLK_FILT IN

C4502_RF
0.1UF
20%
6.3V
X5R
01005
RADIO_2G_PA

50_PA_2G_LB

C4507_RF
27PF
5%
6.3V
NP0-C0G
0201
RADIO_2G_PA

50_LB_ASM_IN_2G_TX DNP 21

L4501_RF
0.5PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_2G_PA

L4503_RF
10NH-3%-0.170A
01005
RADIO_2G_PA
NOSTUFF

50_PA_2G_MB

C4508_RF
27PF
5%
6.3V
NP0-C0G
0201
RADIO_2G_PA

50_MB-HB_ASM_IN_2G_TX DNP 22

L4502_RF
0.7PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_2G_PA
NOSTUFF

L4504_RF
0.7PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_2G_PA
NOSTUFF

LOW BAND ANTENNA SWITCH MODULE

75_RFFE2_SCLK_FILT

75_RFFE2_SDATA_BB

L4605_RF
120-OHM-210MA
01005
RADIO_LB_ASM

PP_1V8_LDO15

PP_1V8_LBASM_VIO
VOLTAGE=1.8V

PP_2V8_LDO14

50_LB_COUPLER_DIPLEXER_IN

C4601_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_LB_ASM

C4602_RF
100PF
5%
16V
NP0-C0G
01005
RADIO_LB_ASM

C4603_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_LB_ASM

VCC 21
VIO 24
SDATA 22
SCLK 23

ULASM_RF
RF5150
LGA
RADIO_LB_ASM

Pin	Signal
1	TRX1
2	TRX2
3	TRX3
4	TRX4
6	TRX6
7	TRX7
14	TRX8
15	TRX9
16	TRX10
17	TRX11

50_LB_ASM_IN_2G_TX
50_LB_ASM_IN_B20
50_LB_ASM_IN_B26
50_LB_ASM_IN_B28A

50_LB_ASM_IN_B27
50_LB_ASM_IN_B13
50_LB_ASM_IN_B12
50_LB_ASM_LB_DRX_OUT
50_LB_ASM_IN_B28B_B29
50_LB_ASM_IN_B8

CPL_OUT 19

ANT1 9

ANT2 12

GND
5 8 10 11 13 18 20

EPAD
25 26 27 28

C4604_RF
3.9NH+/-0.1NH-0.5A
0201
RADIO_LB_ASM

50_LB_ASM_ANT1

50_LB_ASM_ANT1_LAT

L4601_RF
1.0PF
+/-0.05PF
25V
C0G-CERM
0201
RADIO_LB_ASM

L4603_RF
10NH-3%-250MA
0201
RADIO_LB_ASM
NOSTUFF

C4605_RF
3.0NH+/-0.1NH-0.6A
0201
RADIO_LB_ASM

50_LB_ASM_ANT2

50_LB_ASM_ANT2_COAX_LOW

L4602_RF
10NH-3%-250MA
0201
RADIO_LB_ASM
NOSTUFF

L4604_RF
10NH-3%-250MA
0201
RADIO_LB_ASM
NOSTUFF

MID-HIGH BAND ANTENNA SWITCH MODULE

EVT ASM ASSIGNMENT:
B40B/B41C - TRX2
B30 - TDD3

75_RFFE2_SCLK_FILT
75_RFFE2_SDATA_BB
PP_1V8_LDO15
PP_2V8_LDO14

C4701_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_MB-HB_ASM

C4702_RF
100PF
5%
16V
NP0-C0G
01005
RADIO_MB-HB_ASM

C4703_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_MB-HB_ASM

50_MB-HB_COUPLER_DIPLEXER_IN

UHASM_RF
LMFEESGB-G54
LGA
RADIO_MB-HB_ASM

VCC 21
VIO 22
SDATA 24
SCLK 23

50_MB-HB_ASM_IN_B40B_B41C   TRX2 2
50_MB-HB_ASM_IN_B25_B4CA   TRX3 3
50_MB-HB_ASM_IN_B7   TRXB7 4
50_MB-HB_ASM_IN_B1_B3_B4   TRXB1/B3/B4 28
50_MB-HB_ASM_IN_2G_TX   MB2GTX 30
50_MB-HB_ASM_IN_B34_B39   TDD1 5
50_MB-HB_ASM_IN_B40A_B41A   TDD2 7
50_MB-HB_ASM_IN_B30   TDD3 8
50_MB-HB_ASM_IN_B38_B41B   TDD4 9
50_MB-HB_ASM_HB_DRX_OUT   HBDIV 10
50_MB-HB_ASM_MB_DRX_OUT   MBDIV 12

CPL_OUT 26
ANT1 15
ANT2 18

GND   EPAD

C4704_RF
2.5NH+/-0.1NH-0.6A
0201
RADIO_MB-HB_ASM

50_MB-HB_ASM_ANT1
50_MB-HB_ASM_ANT1_LAT

L4701_RF
10NH-3%-250MA
0201
NOSTUFF
RADIO_MB-HB_ASM

L4703_RF
10NH-3%-250MA
0201
NOSTUFF
RADIO_MB-HB_ASM

C4705_RF
27PF
5%
6.3V
NP0-C0G
0201
RADIO_MB-HB_ASM

50_MB-HB_ASM_ANT2
50_MB-HB_ASM_ANT2_COAX_LOW

L4705_RF
10NH-3%-250MA
0201
NOSTUFF
RADIO_MB-HB_ASM

L4706_RF
10NH-3%-250MA
0201
NOSTUFF
RADIO_MB-HB_ASM

DIVERSITY MODULE

75_RFFE3_SCLK_FILT
75_RFFE3_SDATA_BB

L4804_RF
120-OHM-210MA
PP_1V8_LDO15
01005
RADIO_DRX_ASM
PP_1V8_DIVASM_VIO
VOLTAGE=1.8V

PP_2V8_LDO14

C4801_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_DRX_ASM

C4802_RF
100PF
5%
16V
NP0-C0G
01005
RADIO_DRX_ASM

C4803_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_DRX_ASM

C4804_RF
15PF
5%
25V
NP0
0201
RADIO_DRX_ASM
50_LB_ASM_LB_DRX_OUT

VDD   VIO   SDATA   SCLK

50_DRX_LB1_B27_B29   27   B27/B29
50_DRX_LB2_B26_B13_B17_B12   29   B12/B13/B17/B26
50_DRX_LB3_B28   30   B28
50_DRX_LB4_B8_B20   32   B8/B20

UDIVA_RF
HFQSWAHUA-240
LGA
RADIO_DRX_ASM

L4801_RF
22NH-3%-0.25A
0201
RADIO_DRX_ASM

50_DRX_MB1_B1   1   B1
50_DRX_MLB6_B3   35   B3
50_DRX_MB5_B25   36   B25
50_DRX_MB4_B34_B39   37   B34/B39
50_DRX_MB3_B4   38   B4

LBIN   15   50_DRX_ASM_LB_IN

MBIN   18   50_DRX_ASM_MB_IN

HBIN   21   50_DRX_ASM_HB_IN

C4805_RF
10PF
5%
25V
CER
0201
RADIO_DRX_ASM
50_MB-HB_ASM_MB_DRX_OUT

C4807_RF
0.1UF
20%
6.3V
X5R-CERM
01005
RADIO_DRX_ASM
NOSTUFF

50_DRX_HB2_B7_B41C   3   B7/B41C
50_DRX_HB4_B30_B38_B41B   5   B38/B41/B30
50_DRX_HB3_B40_B41A   6   B41A/B40

L4802_RF
12NH-3%-0.3A-0.5OHM
0201
RADIO_DRX_ASM

C4806_RF
2.5NH+/-0.1NH-0.6A
0201
RADIO_DRX_ASM
50_MB-HB_ASM_HB_DRX_OUT

GND   THRM_PAD

2 4 7 12 13 14 16 17 19 20 22 23 24 25 26 28 31 33 34   39 40 41 42 43 44 45 46 47

L4803_RF
10NH-3%-250MA
0201
NOSTUFF
RADIO_DRX_ASM

L4805_RF
10NH-3%-250MA
0201
NOSTUFF
RADIO_DRX_ASM

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PP5100_RF
P2MM-NSM

26 5 3   4FF_SIM_SWP   1
                                                                OMIT

PP5100_RF
P2MM-NSM

11 7 5   PP_JIM2_LDO13

C3010_RF
2.2UF
20%
6.3V
X5R-CERM
0201
RADIO_BB

R3013_RF
15.00K
1%
1/32W
MF
01005
RADIO_BB

A1
VCC

U5101_RF
ST33G1M2STL7EAK7
WLCSP
OMIT

9 5 IN   SIM2_CLK   D1 CLK
9 5 IN   SIM2_RESET   D2 RST   GPIO0 A2 ──✕ NC
                                B3 SWP   GPIO1 B1 ──✕ NC
                      NC ✕──   GPIO2 D3 ──✕ NC
                                                   GPIO3 C1 ──✕ NC

                      NC ✕── B2 NC   IO0 C3 5 SIM2_DATA_R

R3014_RF
0.00
0%
1/32W
MF
01005
RADIO_BB

SIM2_DATA   5 9

A3
GND

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SIM

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WIFI/BT

PP_1V8_S2R_VDDIO_WLAN_BT

R5213_RF 0.00 0% 1/32W MF 01005

PP_WL_VDDIO VOLTAGE=1.8V

C5201_RF 27PF 5% 16V NP0-C0G 01005

C2500_RF 0.01UF 10% 6.3V X5R 01005

PP_VCC_MAIN VOLTAGE=4.3V

C5283_RF 4.7UF 20% 6.3V X5R-CERM1 402

C5284_RF 4.7UF 20% 6.3V X5R-CERM1 402

U5200_RF
LBEE5UM1EE-775
LGA
SYM 2 OF 2

Pin	Name		Pin	Name
1	GND		106	THRM_PAD
20	GND		107	THRM_PAD
25	GND		108	THRM_PAD
27	GND		109	THRM_PAD
32	GND		110	THRM_PAD
34	GND		111	THRM_PAD
40	GND		112	THRM_PAD
42	GND		113	THRM_PAD
45	GND		114	THRM_PAD
48	GND		115	THRM_PAD
51	GND		116	THRM_PAD
55	GND		117	THRM_PAD
56	GND		118	THRM_PAD
58	GND		119	THRM_PAD
61	GND		120	THRM_PAD
63	GND		121	THRM_PAD
66	GND		122	THRM_PAD
67	GND		123	THRM_PAD
68	GND		124	THRM_PAD
70	GND		125	THRM_PAD
71	GND		126	THRM_PAD
72	GND		127	THRM_PAD

THRM_PAD 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 103, 104, 105

THRM_PAD 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162

U5200_RF
LBEE5UM1EE-775
LGA
SYM 1 OF 2

Signal	Pin	Pin name
PMU_TO_WLAN_32K_CLK	41	CLK32K_AP
UART4_AP_TO_WLAN_TX	14	GPIO_11_FAST_UART_RX
UART4_WLAN_TO_AP_TX	13	GPIO_12_FAST_UART_TX
UART4_WLAN_TO_AP_RTS_L	15	GPIO_7_FAST_RTS_OUT
PMU_TO_WLAN_REG_ON	29	WL_REG_ON
PMU_TO_BT_REG_ON	28	BT_REG_ON
JTAG_WLAN_SEL	37	JTAG_SEL
NC	17	ANT_SWITCH_CORE1
NC	16	ANT_SWITCH_CORE0
PCIE_AP_TO_WLAN_DEV_WAKE	39	GPIO_1_HSIC_HOST_READY
GPIO_2_JTAG_TCK	22	GPIO_2_HSIC_RESUME/JTAG_TCK
GPIO_3_JTAG_TMS	23	GPIO_3_JTAG_TMS
GPIO_6_JTAG_TRST	21	GPIO_6_SEC_IN/JTAG_TRST
GPIO_4_JTAG_TDI	18	GPIO_4_JTAG_TDI
GPIO_5_JTAG_TDO	19	GPIO_5_SEC_OUT/JTAG_TDO
BT_TO_PMU_HOST_WAKE	5	HOST_WAKE_BT
50_G_0_MATCH_MOD	57	2G_ANT_CORE0
50_G_1_MATCH_MOD	69	2G_ANT_CORE1
50_A_0_MATCH_MOD	62	5G_ANT_CORE0
50_A_1_MATCH_MOD	26	5G_ANT_CORE1
NC	3	BT_GPIO_3
NC	2	BT_GPIO_5

Pin	Pin name	Signal
10	BT_GPIO_4	NC
4	BT_WAKE	AP_TO_BT_WAKE
8	BT_UART_RXD	UART1_AP_TO_BT_TX
9	BT_UART_TXD	UART1_BT_TO_AP_TX
7	BT_UART_CTS*	UART1_AP_TO_BT_RTS_L
6	BT_UART_RTS*	UART1_BT_TO_AP_RTS_L
60	BT_PCM_CLK	I2S_AP_TO_BT_BCLK
64	BT_PCM_SYNC	I2S_AP_TO_BT_LRCK
65	BT_PCM_OUT	I2S_BT_TO_AP_DOUT
59	BT_PCM_IN	I2S_AP_TO_BT_DOUT
24	GPIO_13_WLAN_THROTTLE	GPIO_13_WLAN_THROTTLE
38	GPIO_0_WL_HOST_WAKE	WLAN_TO_PMU_HOST_WAKE
52	PCI_PME	PCIE_PME
53	PCIE_CLKREQ	PCIE_WLAN_TO_AP_CLKREQ_L
54	PERST	PCIE_AP_TO_WLAN_PERST_L
50	PCIE_RDP0	PCIE_AP_TO_WLAN_TX_P
49	PCIE_RDN0	PCIE_AP_TO_WLAN_TX_N
47	PCIE_TDP0	PCIE_WLAN_TO_AP_TX_P
46	PCIE_TDN0	PCIE_WLAN_TO_AP_TX_N
44	PCIE_REFCLKP	PCIE_AP_TO_WLAN_REFCLK_P
43	PCIE_REFCLKN	PCIE_AP_TO_WLAN_REFCLK_N
11	GPIO_14_WL_UART_RX	OWL_TO_WLAN_CONTEXT_A
12	GPIO_15_WL_UART_TX	OWL_TO_WLAN_CONTEXT_B
33	SR_VLX	SRVTX
31	VIN_LDO	VIN_LDO

VDDIO_1P8V 30
BATT_VCC 35
BATT_VCC 36

XW1_RF SM
XW2_RF SM
XW3_RF SM

UART4_AP_TO_WLAN_RTS_L
UART_BB_TO_WLAN_COEX_TX
UART_WLAN_TO_BB_COEX_TX

PP_WL_VDDIO
NO STUFF
R5200_RF 10K 5% 1/32W MF 01005

L5201_RF 2.2UH-20%-0.28A-0.25OHM 0805

C5200_RF 4.7UF 20% 6.3V X5R-CERM1 402

PART NUMBER

PART NUMBER	ALTERNATE FOR	BOM OPTION	REF DES	COMMENTS:
339S00043	339S00033		U5200_RF	ALT WIFI/BT MODULE

R5202_RF 0.7NH+/-0.1NH-0.63A
50_A_1_MATCH_MOD
01005
50_A_1_DPLX

C5215_RF 0.2PF +/-0.1PF 16V NP0-C0G 01005 NO STUFF

C5205_RF 0.2PF +/-0.05PF 16V CERM 01005

F5202_RF DPX205950DT-9163A1SJ 0805

HI 6 COM 2
LO 4 GND

R5205_RF 0.8NH+/-0.1NH-0.630A
50_A_1_DPLX 50_A_1_LAT_COAX
01005

C5209_RF 0.2PF +/-0.05PF 16V CERM 01005

C5210_RF 0.2PF +/-0.1PF 16V NP0-C0G 01005 NO STUFF

WIFI LAT COAX CONNECTOR

JWLAT_RF MM5829-2700 F-ST-SM1

WLAN LAT 2.4GHZ BAW BPF ON CSA 4

PP components (OMIT)

PP5290_RF P2MM-NSM OMIT — OWL_TO_WLAN_CONTEXT_A
PP5291_RF P2MM-NSM OMIT — OWL_TO_WLAN_CONTEXT_B
PP5292_RF P2MM-NSM OMIT — GPIO_13_WLAN_THROTTLE
PP5293_RF P2MM-NSM OMIT — GPIO_2_JTAG_TCK
PP5294_RF P2MM-NSM OMIT — PCIE_PME
PP5295_RF P2MM-NSM OMIT — GPIO_3_JTAG_TMS
PP5296_RF P2MM-NSM OMIT — GPIO_6_JTAG_TRST
PP5297_RF P2MM-NSM OMIT — GPIO_4_JTAG_TDI
PP5298_RF P2MM-NSM OMIT — GPIO_5_JTAG_TDO

PP5288_RF P2MM-NSM OMIT — PMU_TO_WLAN_32K_CLK
PP5285_RF P2MM-NSM OMIT — WLAN_TO_PMU_HOST_WAKE
PP5289_RF P2MM-NSM OMIT — PCIE_AP_TO_WLAN_REFCLK_P
PP5299_RF P2MM-NSM OMIT — PCIE_AP_TO_WLAN_REFCLK_N
PP5300_RF P2MM-NSM OMIT — PCIE_AP_TO_WLAN_TX_P
PP5301_RF P2MM-NSM OMIT — PCIE_AP_TO_WLAN_TX_N
PP5287_RF P2MM-NSM OMIT — PMU_TO_WLAN_REG_ON
PP5286_RF P2MM-NSM OMIT — PMU_TO_BT_REG_ON

PP5200_RF P2MM-NSM OMIT — UART1_AP_TO_BT_TX
PP5201_RF P2MM-NSM OMIT — UART1_BT_TO_AP_TX
PP5202_RF P2MM-NSM OMIT — UART1_AP_TO_BT_RTS_L
PP5203_RF P2MM-NSM OMIT — UART1_BT_TO_AP_RTS_L
PP5302_RF P2MM-NSM OMIT — PCIE_AP_TO_WLAN_DEV_WAKE
PP5303_RF P2MM-NSM OMIT — BT_TO_PMU_HOST_WAKE
PP5305_RF P2MM-NSM OMIT — PCIE_AP_TO_WLAN_PERST_L

LAST UPDATED: 4/30/2014

STOCKHOLM

ALL NETNAMES NEED TO BE CHECKED

U5302_RF
WLCSP
FAN48614BUC50X

PP VCC MAIN

C5321_RF
15UF
20%
6.3V
X5R
0402-1

L5303_RF
1.8UH-0.7A
0603 STOCKHOLM_BOOST_SW

VIN A3
SW B1
SW B2
EN B3
VOUT A1
VOUT A2

STOCKHOLM_5V

C5322_RF
15UF
20%
6.3V
X5R
0402-1

C5323_RF
15UF
20%
6.3V
X5R
0402-1

PGND C1
PGND C2
AGND C3

STOCKHOLM_5V

PP_1V8_LDO6
RADIO_STOCKHOLM
C5320_RF
0.1UF
20%
6.3V
X5R-CERM
01005

STOCKHOLM_DC_BOOST_EN

STOCKHOLM TVDD
RADIO_STOCKHOLM
C5330_RF
1UF
20%
10V
X5R
0201

PP_VCC_MAIN

RADIO_STOCKHOLM
C5324_RF
1UF
10%
10V
X5R
0201

R5310_RF
0.00
0%
1/32W
MF
01005

STOCKHOLM AVDD
R5314_RF
0.00
0%
1/32W
MF
01005

VOLTAGE=1.80V

PP STOCKHOLM_ESE

RADIO_STOCKHOLM
C5304_RF
1UF
20%
10V
X5R
0201

STOCKHOLM DVDD

VOLTAGE=1.80V

PP STOCKHOLM 1V8 S2R
RADIO_STOCKHOLM
C5302_RF
1UF
20%
10V
X5R
0201

C5303_RF
0.22UF
10%
10V
CERM-X5R
0201
RADIO_STOCKHOLM

C5308_RF
1000PF
2%
25V
COG-NP0
0201

R5303_RF
560
5%
1/20W
MF
201

STOCKHOLM_RXP_CAP

L5301_RF
160NH-10%-0.48A-0.33OHM
0402

STOCKHOLM_BAL1
STOCKHOLM_ANT_MATCH

C5310_RF
820PF
2%
25V
COG-NP0
0201

C5312_RF
220PF
5%
50V
COG
0201

T5301_RF
ATB201206F-200111
0805

BAL1
UNBAL
BAL0
GND

C5313_RF
22PF
5%
50V
COG
0201
NOSTUFF

STOCKHOLM_ANT

U5301_RF
PN66VEU3-A101D010
UFLGA

VDD VBAT SIM_PMU_VCC PVDD VDP TVDD SVDD ESE_VDD AVDD

IRQ
SVDD_REQ
DWL
CLK_REQ
NFC_CLK_XTAL1
RX
TX
CTS
RTS
VEN
SMX_RST*
SMX_CLK
ESE_IO1
SPIM_MOSI
SPIM_MISO
SPIM_SCK
XTAL2

SPIM_IRQ
SIM_SWIO
GPIO0
SPIM_NSS
TX_PWR_REQ
ESE_DWPM_DBG
ESE_DWPS_DBG
RXP
RXN
TX1
TX2
WKUP_REQ
VMID
SE2_PWR_REQ
SE2_SVDD_IN

VSS AVSS AVSS AVSS DVSS DVSS TVSS PVSS

STOCKHOLM_TO_PMU_HOST_WAKE
AP_TO_STOCKHOLM_FW_DWLD_REQ
STOCKHOLM_TO_BBPMU_CLK_REQ
50_BBPMU_TO_STOCKHOLM_19P2M_CLK
UART3_AP_TO_STOCKHOLM_TXD
UART3_STOCKHOLM_TO_AP_TXD
UART3_AP_TO_STOCKHOLM_RTS_L
UART3_STOCKHOLM_TO_AP_RTS_L
PMU_TO_STOCKHOLM_EN

PP STOCKHOLM ESE

NC
NC
NC
NC
NC
NC

4FF_SIM_SWP
STOCKHOLM SIM_PRES

STOCKHOLM DWPM_DBG
STOCKHOLM DWPS_DBG

STOCKHOLM_RXP
STOCKHOLM_RXN
STOCKHOLM_TX1
STOCKHOLM_TX2

AP_TO_STOCKHOLM_DEV_WAKE
STOCKHOLM_VMID
SE2_PWR_REQ
SE2_SVDD_IN

TP5301_RF
A
TP-P55
TP5301

R5316_RF
0.00
0%
1/32W
MF
01005
NOSTUFF

STOCKHOLM_SPIM_MOSI

R5315_RF
0.00
0%
1/32W
MF
01005

STOCKHOLM_SIM_PRES

RADIO_STOCKHOLM
C5317_RF
0.1UF
20%
6.3V
X5R-CERM
01005

Q5301_RF
DMP22D4UFA
DFN2006
COG-NP0
NOSTUFF

S
G
D

PP_STOCKHOLM_1V8_S2R

L5302_RF
160NH-10%-0.48A-0.33OHM
0402

STOCKHOLM_BAL0

C5311_RF
820PF
2%
25V
COG-NP0
0201

C5314_RF
22PF
5%
50V
COG
0201
NOSTUFF

C5309_RF
1000PF
2%
25V
COG-NP0
0201

R5304_RF
560
5%
1/20W
MF
201

STOCKHOLM_RXN_CAP

C5315_RF
1000PF
2%
25V
COG-NP0
0201

C5316_RF
1000PF
2%
25V
COG-NP0
0201

C5318_RF
560PF
5%
50V
NP0-COG
0201

C5319_RF
100PF
5%
50V
COG
0201

TP5303_RF
A
TP-P55

TP5304_RF
A
TP-P55

PP STOCKHOLM 1V8 S2R
RADIO_STOCKHOLM
R5301_RF
100K
5%
1/32W
MF
01005
NOSTUFF

PMU_TO_STOCKHOLM_EN

AP_TO_STOCKHOLM_FW_DWLD_REQ
RADIO_STOCKHOLM
R5302_RF
100K
5%
1/32W
MF
01005

AP_TO_STOCKHOLM_DEV_WAKE
RADIO_STOCKHOLM
R5305_RF
100K
5%
1/32W
MF
01005

PAGE TITLE
STOCKHOLM

Apple Inc.

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